amateur radio

Vol. 36, No. 6
JUNE
1968

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6AR5	$1.68	,,	,,	6S2	$1.42	,,	,,
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"AMATEUR RADIO"

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JUNE 1968
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Editor:
K. E. PINCOTT VK3AFJ

Assistant Editor:
E. C. Manifold VK3EM

Publications Committee:
G. W. Baty (Secretary) VK3AOM
A. W. Chandler (Circulation) VK3LC
Ken Gillespie VK3GK
W. E. J. Roper VK3ARZ

Draughtsmen:—
Clem Allan VK3ZIV
Ian Smith .... 36 Green St., Noble Park

Advertising Enquiries:
C/o. P.O. Box 36, East Melbourne, Vic., 3002.
or
Mrs. BELLAIRS, Phone 41-3535, 478 Victoria Parade, East Melbourne, Vic., 3002. Hours: 10 a.m. to 3 p.m. only.

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Acknowledgments will be sent following the Committee meeting on the second Monday of each month. All Sub-Editors should forward their articles to reach "A.R." **before the 5th of each month.** Any item received after the Committee meeting will be held over until the next month. Publication of any item is dependent upon space availability, but in general about two months may elapse before a technical article is published after consideration by the Publications Committee.

★

Members of the W.I.A. should refer all enquiries regarding delivery of "A.R." direct to their Divisional Secretary and not to "A.R." direct. Non-members of the W.I.A. should write to the Victorian Division, C/o. P.O. Box 36, East Melbourne. Two months' notice is required before a change of mailing address can be effected. Readers should note that any change in the address of their transmitting station must, by P.M.G. regulation, be notified to the P.M.G. in the State of residence; in addition, "A.R." should also be notified. A convenient form is provided in the "Call Book".

★

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W.I.A. OFFICIAL BROADCASTS

NEW SOUTH WALES

VK2WI, Sundays, at 1100 hrs. E.A.S.T.
3595 Kc. a.m. 145.130 Mc. a.m.
7146 Kc. a.m. 146.000 Mc. f.m.
53.866 Mc. a.m. (53.950 Mc. f.m. proposed shortly)

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3600 Kc. s.s.b. 145.854 Mc. f.m.
7146 Kc. a.m. 432.500 Mc. a.m
53.032 Mc. a.m.

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VK4WI, Sundays, at 0900 hrs. E.A.S.T.
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7146 Kc. 144.36 Mc.
14.342 Mc.

SOUTH AUSTRALIA

VK5WI, Sundays, at 0900 hrs. C.A.S.T.
3.5, 14, 52 and 144 Mc. bands.

WESTERN AUSTRALIA

VK6WI, Sundays,

TASMANIA

VK7WI, Sundays, at 1000 hrs. E.A.S.T.
3672 Kc., and re-transmitted by representative stations on—
7146 Kc. 144.1 Mc.
53.032 Mc. 432.6 Mc.

TRIO

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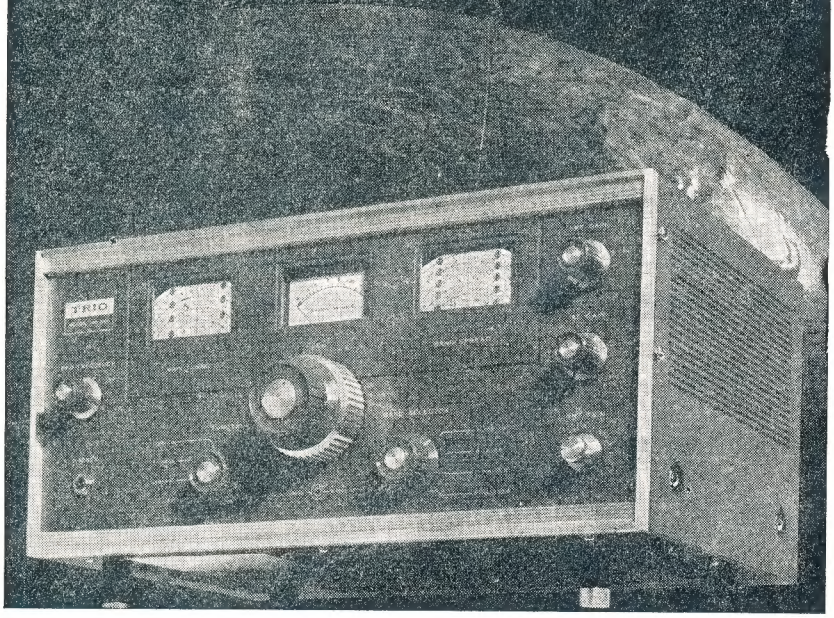
9R-59DE



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Antenna Input: 50-400 ohms impedance.
Audio Power Output: 1.5 watts.
Sensitivity: 2 μV for 10 dB S/N Ratio (at 10 Mcs.).
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V4—6BA6 1st IF Amplifier.
V5—6BA6 2nd IF Amplifier.
V6—6BE6 Product Detector.
V7a—6AQ8 Beat Frequency Oscillator.
V7b—6AQ8 1st AF Amplifier.
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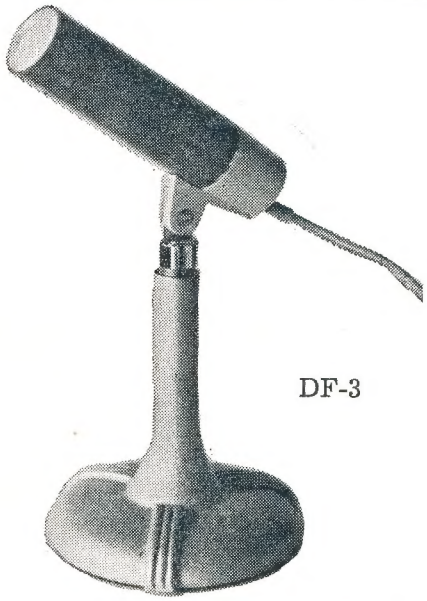

DF-3

SPECIFICATIONS:

Output Impedance .... 50 ohms or 50K ohms
Effective output level .... —55 db. [0 db. = (one) 1V. Microbar]
Freuency response .... 50 to 15,000 c.p.s.

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LINEAR AMPLIFIERS

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Properly used, part of the driver energy is fed through into the output circuit. Also there is negative feedback automatically applied, reducing distortion. That action is similar to the effect of an un-bypassed cathode resistor in an audio amplifier.

However, all is not rosy in the garden of grounded grid amplifiers! There is more to it as has been pointed out by Eimac. As tube manufacturers, they are only interested in the proper use and application of their products.

Nobody less than their research engineer, Bill Orr, of Quad antenna fame, etc., has published their findings in "QST" in 1960, 1962 and 1964. He has clearly pointed out that:—

1. Screen grid tubes, with their grids all tied to ground, should not be used. Normal control grid bias and second grid positive voltages should be applied. In particular, modern high-amplification factor tubes can easily be overdriven and damaged.
2. A tuned cathode circuit is essential to maintain proper wave form and low distortion. It acts as a fly-wheel as required in a class C plate modulated output circuit.

Therefore only TRIODES are recommended in grounded grid amplifiers, used in circuits with tuned input provisions.

Naturally these amplifiers are more complicated and can cost more than simpler set-ups with cheaper tubes, except for one type.

The HEATH HA-14 Amplifier Kits have all that is needed — two husky triodes, and will provide full legal power with less than 50 watts driving power and 1800 volts of H.T.

These kits are available for only $150, the cheapest linear solution, with tuned circuitry and even A.L.C. voltage generation.

Also included is an S.W.R. meter. Many will be able to feed them with available power supply components. Of course they can be supplied fully assembled and tested, and either with a power supply unit or power supply components at nominal extra cost.

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THE FEDERAL CONVENTION

The Federal Convention held in Sydney over Easter was held in conjunction with an inaugural Congress of Region III. Societies. A statement from this Congress appeared on page 13 of last month's issue of "A.R."

One very significant point about the 1968 Convention and Congress was that the Australian Post Office was represented by the Controller Radio Branch, P.M.G., Mr. C. Carroll, who participated in the opening session of the I.A.R.U. Region III. Congress, sat in on some of the working discussions, and attended the Convention Dinner. To the best of my knowledge, it is the first time that the Postmaster-General has been officially represented at a W.I.A. Convention by a senior official from Central Office. We wish to thank the Postmaster-General for this gesture, which was viewed both by W.I.A. members and overseas delegates as an indication of the standing of the Amateur Service in the eyes of our Administration.

As is usual, many motions were discussed at length, briefly these fall into seven categories:—

Constitution Items

No formal motion was presented, but a letter from the solicitors handling these matters was read. This referred to some minor problems which have arisen with the presentation of our documents to the Attorney-General. However, it was pointed out that it is expected these problems will be overcome soon, and incorporation of the Federal Company will eventuate before the end of this year.

Policy Items

Among this group was the motion regarding an increase in the price of "A.R." This was referred to by the Editor on page 22 of last month's issue. Federal Executive has appointed a subcommittee to examine the matter as requested by Federal Council. Y.R.S. matters occupied some time—discussion revolved around the title of the scheme, and the status of Y.R.C.S. vis-a-vis W.I.A. A Federal Y.R.S. co-ordinator has been appointed by F.E. Federal policy on novice licensing was discussed, a motion that the Institute no longer advocate the issue of novice licences by the Australian Administration was narrowly carried. Several motions regarding W.I.A's issuance of high-speed Morse proficiency awards were carried, and F.E. has requested Federal Activities Officer to investigate the matter and report.

Administration and Finance

The major series of motions in this section dealt with the administration of the I.T.U. Fund. A motion to invest the fund in government bonds was defeated, as was a motion to constitute the I.T.U. Fund as a formal Trust Fund. However, it was resolved that I.T.U. monies, together with $300 representing past interest, be transferred to a separate bank account. This will allow interest to accrue and compound separately from general F.E. monies. Executive has taken the necessary steps to preserve the I.T.U. Fund in line with W.I.A. policy.

The Treasurer's report, presented in Sydney, indicated that VK3, 4, 5, 6 and 7 have reached their I.T.U. Fund targets, and the Fund this month should stand at approximately $6,000, being both donations and interest accrued.

I.A.R.U. Matters

Federal Council approved the actions of Executive in convening an inaugural Region III. Congress, and agreed to provide a Secretariat, and an annual sum of $600 to the I.A.R.U. Region III. Division. This sum will be recovered from VK Divisions at a rate of 20 cents per member per annum. J.A.R.L., N.Z.A.R.T. and P.A.R.A. will also contribute annual sums to I.A.R.U. Region III. Division and inclusive of W.I.A's contribution, the annual income of the regional organisation should approach $2,200. It may be pointed out that the image of W.I.A. has risen considerably in the eyes of our own government and

FEDERAL COMMENT

of other Amateur Societies throughout the world, due to its initiative in convening the inaugural Congress, and its assistance in the outcome which should advance Amateur Radio in this Region of Asia and Oceania. Federal Executive will assume the role of "Region III. Secretariat" and undertake the administration of the regional organisation under the control of the Directorate.

P.M.G. Representation

Very few matters arose in this section, however Federal Secretary was given some information about matters affecting certain Divisions which F.E. is to take up with the Department.

Contests

There were three different motions and suggested changes to the R.D. Contest scoring methods. A long debate resulted in a realisation that any scoring formula would introduce anomalies. It was decided to revert to the 1966 rules for this year's R.D. Contest with the 1967 rules for v.h.f. participation.

An amendment of rules of the John Moyle Memorial Field Day Contest was agreed to, this will allow a period of 26 hours from 0600 GMT with stations competing to operate for any 24-hour period within that 26 hours.

General Business

Several items arose as general business. These require ratification before action because they had not been circulated prior to the Convention.

Appointments

Federal Executive at its first meeting for 1968-69, in May, made the following appointments:—

- Federal President W.I.A. and Director I.A.R.U. Region III. Division: J. Battrick, VK3OR.
- Federal Vice-President and member I.A.R.U. Region III. Secretariat: M. Owen, VK3KI.
- Federal Secretary and Secretary-General I.A.R.U. Region III. Division: P. Williams, VK3IZ.
- Federal Activities Officer and member I.A.R.U. Region III. Secretariat: D. Rankin, VK3QV.
- Federal I.T.U. Liaison Officer: G. Pither, VK3VX.
- Federal Treasurer: K. Connelly, VK-3ARD.
- Federal Business Manager: A. Seedsman, VK3IE.
- Federal Intruder Watch Officer and member I.A.R.U. Region III. Secretariat: D. Wardlaw, VK3ADW.
- Federal Y.R.S. Co-ordinator: J. Webster, VK2ZPW.
- Federal Historian and Policy Officer: G. Glover, VK3AG.
- Federal QSL Manager: R. Jones, VK-3RJ.
- Federal Awards Manager: G. Wilson, VK3AMK.
- Federal Contest Manager: N. Penfold, VK6ZDK.
- Federal S.w.l. Awards Manager: Eric Trebilcock, BERS195.

From a perusal of this list, it is apparent that some F.E. members now wear "two hats". The desire for W.I.A. to administer the I.A.R.U. Region III. Division came from other countries and this was accepted by W.I.A. at Sydney. The same people administer the two organisations that is sure, but they are nevertheless two separate organisations with distinct status and finance.

Independent, separate and distinct from the I.A.R.U. Region III. Division. W.I.A. has its own funds, and the I.T.U. Fund, and its I.T.U. Liaison Officer, as before. However, W.I.A. is now a member of a new regional "club" designed to advance Amateur Radio in Asia and Oceania and work for regional solidarity should any further attack on our frequencies occur.

A CRYSTAL LOCKED AM-CW TRANSMITTER FOR 6 METRES

RODNEY CHAMPNESS, VK3UG/VK0CR

THIS particular transmitter I built whilst down on Macquarie Island. I did think at one stage of building an s.s.b. transceiver but not having quite enough of the necessary parts, we settled for an a.m./c.w. transmitter. In this particular circuitry form it works quite well. The audio is very conventional, a few compromises were however necessary as I didn't have all the right value components available.

My first couple of attempts at the r.f. side of the works did not pan out as anticipated. The first attempts were using various triode-pentode valves, the triode as an overtone oscillator and the pentode as a doubler-driver. I was not able to get quite as much drive as I would have liked to the final. I ended up, as is evident in the diagram, with a triode overtone oscillator followed by a triode doubler into a pentode straight through driver to the tetrode p.a. valve.

The transmitter was built on a 7" x 11" chassis; it could be smaller as there is a fair bit of spare space. Commencing with the modulator, it can be seen that the first two stages follow normal microphone amplifier circuitry. The second half of the 12AX7 feeds an ex-522 driver transformer to give push-pull audio to the grids of the 6BQ5 modulators. The 522 transformer is not designed to handle d.c. current in its primary, hence the blocking capacitor feed system.

The 6BQ5s are run with fixed bias in the neighbourhood of —12 volts on transmit and —20 when not transmitting. The 6BQ5s are running somewhere between class AB1 and B1. The 32 uF. capacitor fitted from the 6BQ5 screens to earth is to keep the screens at a reasonably constant voltage whilst modulating. This capacitor could be increased to 50 uF. if desired.

The audio response of the modulator is shaped to cut the highs and the lows of the speech spectrum. The 100 pF. capacitor to earth restricts highs and acts as an r.f. bypass and the 470 pF. coupler restricts lows and reduces any residual hum. To prevent acoustic feedback the h.t. line to the modulator and all bar the oscillator of the r.f. section is grounded immediately on going to receive. The audio quality on listening tests is quite good.

The modulation transformer is not of the correct impedance ratio unfortunately, it was the only one that I had available. Its impedance values were primary 8,000 ohms plate to plate and secondary 4,200 ohms. A more suitable ratio would be 8,000 ohms plate to plate with a secondary impedance of about 2,800 ohms. The sensitivity of the modulator is quite sufficient for average crystal type microphones.

The r.f. side of the transmitter follows fairly standard lines. The crystal overtone oscillator uses the Squier type oscillator which does not seem as popular as the Robert Dollar, but which I have found extremely reliable, easy to get going with quite high output. The crystal is in the 8 meg. range and its frequency is tripled and then applied to the doubler stage. The doubler is a standard type of circuit which feeds into the 6AM5 driver. The drive to the 6AM5 is about a third of a milliamp.

This stage is treated a little more cautiously as it would be extremely easy to get feedback as input and output are on the same frequency. First precaution is to place a tin plate shield across the valve, so isolating input and output including the associated tuning coils. The plate and grid coils are also placed at right angles to one another.

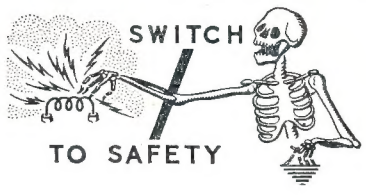
All the 53 meg. coils are air wound with 18 gauge tinned copper wire with the exception of the p.a. coil which is wound with 16 gauge wire. All coils are below chassis level with the exception of the p.a. coil and coupling link, so meaning that the low level 53 meg. coils are partially shielded from the output coil.

The p.a. stage is the normal type, no necessity for neutralisation was found necessary, but it could be quite easily added if thought desirable. The p.a. is quite stable. All by-passes should have short leads to minimise inductance in the leads. There is no sign of regeneration in this transmitter as removing the crystal kills all output.

The transmitter as stated is stable, being crystal controlled at all times with a proviso however. Care is needed in tuning the doubler plate coil as the final will feed back some energy to the driver grid, causing self oscillation. To eliminate this problem, I would completely shield the 12AT7 circuits and also the grid circuit of the 6AM5 by making a small shielded box under the chassis for these circuits. Valve shields may also be desirable. This will reduce the coupling from the p.a. to the 6AM5 grid.

To adjust the coil L1 and the tuning capacitor across L2 two holes in this shielded box would need to be drilled. I was not able to do this in my particular layout. To overcome this feedback in my own transmitter, I slightly mistuned the doubler coil whilst the crystal was out.

Incorporated in this transmitter is protective fixed bias on all stages bar the oscillator in the r.f. section. The doubler, driver and final receive negative fixed bias from the 6BQ5 bias line to protect or partially protect these stages should drive disappear. The —12 volts is quite adequate for the doubler, some additional cathode bias will be needed for full protection of the driver and probably a doubler bias supply from the filament line giving —25 to —30 volts would be adequate for the final.



It will be observed that all stages have radio frequency filtering in some form to keep the r.f. from the h.t. supply line. The oscillator has a 15K ohm, the doubler a 2.2K ohm, the driver a 8.2K ohm and 2.2K ohm, and the final an r.f. choke, a 27K ohm resistor and a 270 pF. capacitor. Keeping r.f. out of the supply lines is most desirable for stable operation. A 0.01 uF. is placed across the 6DQ6A heater and others could be placed across the heaters of the 6AM5 and 12AT7 as additional precautions. The tune-up of the transmitter I will leave until later.

The transmitter is useable on a.m. and c.w. On c.w. the cathode of the final is keyed and h.t. is removed from the modulator and the modulation transformer is shorted out. The keying is probably on the hard side due to no shaping of the keying envelope; this could be corrected by using one of the keying networks described in the R.S.G.B. Handbook, or the A.R.R.L. Handbook or Radio Handbook by Editors and Engineers. It is quite probable that there is leak through of 53 meg. energy when the key is in the up position. The driver may also require keying. This transmitter was not designed for extensive c.w. working.

For a serious 6 metre c.w. operator, I would suggest that the driver and final both be grid block keyed, in this way virtually no 53 megacycle energy will leak through and appear in the output, plus it is much easier to shape the keyed wave form with this type of keying system. Due to limited facilities in regard to parts, I was not able to incorporate this system. A negative grid blocking bias of about —70 to —100 volts would be necessary.

Building this transmitter using good v.h.f. practice all the r.f. stages will be laid out in a straight line along the chassis. I would suggest that the oscillator stage be put in one corner of the chassis for ease of shielding for reasons given earlier.

TESTING AND ALIGNING

Assuming the transmitter has been built along similar lines to what I have done, the time has come to test and align the r.f. section.

L1 should be checked for response at about 26.5 megs. with a g.d.o. with the crystal out and the socket bridged with a capacitor of a few pF. If the coil is too large, turns will need to be taken off or the turns spaced to lower the inductance, remembering to keep about a 3 to 1 ratio of winding in relation to

the tapping on the coil. If the coil is too small a small capacitor of a few pF. across the coil will suffice.

Insert the crystal, apply power to the oscillator only, and with the g.d.o. on absorption, tune the slug of the coil until you get maximum output at approximately three times the crystal fundamental frequency. Check several times that the oscillator starts reliably every time. If not, detune the coil to the side where output drops off more slowly and the oscillator should now be quite reliable in starting.

Now grid dip L2 for a response at 53 megs. or your intended operating frequency, compressing or expanding the coil to get the required dip with the tuning trimmer set at about half capacity. This stage will easily triple, so make sure the stage will not tune to 80 megs. with the trimmer right out. Now apply power to the oscillator and doubler, using the g.d.o. on absorption to make sure the right harmonic is selected. The drive to this stage is about 0.3 mA. with the fixed bias in use.

Starting on the driver stage we once again check with the g.d.o. the resonant frequency of the coil, this time L3, and that it is resonant on 53 megs. using the same techniques as used on the doubler stage. Now apply power to all stages with the exception of the p.a. and adjust the 3-30 pF. trimmer for maximum drive which should be in the vicinity of 3 mA. with the fixed bias in use.

Now to the final. This will be dipped in the normal way with L5 inserted in the centre of the coil. The final I found harder to adjust to get good coupling to the aerial, etc. The values of the capacitors in the earthy side of the link coil will need to be varied to get proper loading and also the position of the link in L4 will need some experimentation.

The value of the p.a. tuning capacitor could be doubled in value as the value quoted was the only one I had. The p.a. could be parallel tuned or a pi-coupler used, any of these being satisfactory on six metres. The operating currents of the final are shown later in this article.

The only precautions necessary with the modulator concern r.f. rectification on the grids of the valves. If the 12AX7 grid leads are shielded and the stoppers used on all modulator valve grids no real problem should exist. The microphone circuits should be kept well away from the r.f. section, particularly the final. One unsuspected cause of r.f. instability in a modulator can sometimes be attributed to the microphone lead being of a resonant length.

Some meter readings and drains to expect. High tension should be about 310v. on a.m. and about 340v. on c.w. at the p.a. plate. P.a. current drain (a.m.), 115 mA.; c.w., 130 mA. Modulator current drain, 40 mA. idling, about 100 mA. full modulation. Modulator screen voltage, no modulation 300v. Oscillator drain 4 mA., doubler 12 mA,. driver 24 mA. Drive currents, driver 0.3 mA., final 3 mA. Should this be in excess of 3 mA. to the final the value of the driver valve screen resistor could be increased and vice-versa.

Total current drain, full modulation, is about 270 mA. at 320 volts supply. This is being drawn from a supply nominally rated at 150 mA. 310 volts. No undue heating of the power supply is noted because of the intermittent nature of the load and the fact that the filament line is lightly loaded. The c.w. load is only 170 mA.

COIL DATA

L1—5/16" diameter slug tuned former with 21 turns close wound enamelled copper wire about 26 B. & S. gauge with a tap at 7 turns from the grid end of the winding.

L2—½" diameter airwound, 5/8" long, with 7turns 18 B. & S. tinned copper wire.

L3—½" diameter airwound, 5/8" long, with 6 turns 18 B. & S. tinned copper wire.

L4—1" diameter airwound, 1" long, with 10 turns 16 B. & S. tinned wire tapped at centre with space for L5 to be inserted.

L5—¾" diameter, 2 turns closewound, spaghetti covered, inserted into centre of L4, 18 B. & S. tinned copper wire.

L6—3 turns wound over a 100 ohm resistor, 20 B. & S. wire.

One small addition that does make the transmitter a little easier to tune up is the addition of a small neon lamp of the NE2 variety to the p.a. coil. The neon is connected via a short length of wire and is mounted in a small rubber grommet in the front panel. Both wires of the neon are soldered together and it is only the capacity between the electrodes and the front panel which constitute the circuit for the neon. Tune the transmitter for maximum brilliance of the neon.

That completes the description of the transmitter. With an input of about 35 watts, an output of about 15 to 20 watts estimated is obtained, but I have no accurate method of measuring it. Input on c.w. is about 45 watts.

That completes the description of the transmitter which was built to communicate with Australia on 6 metres from Macquarie Island.

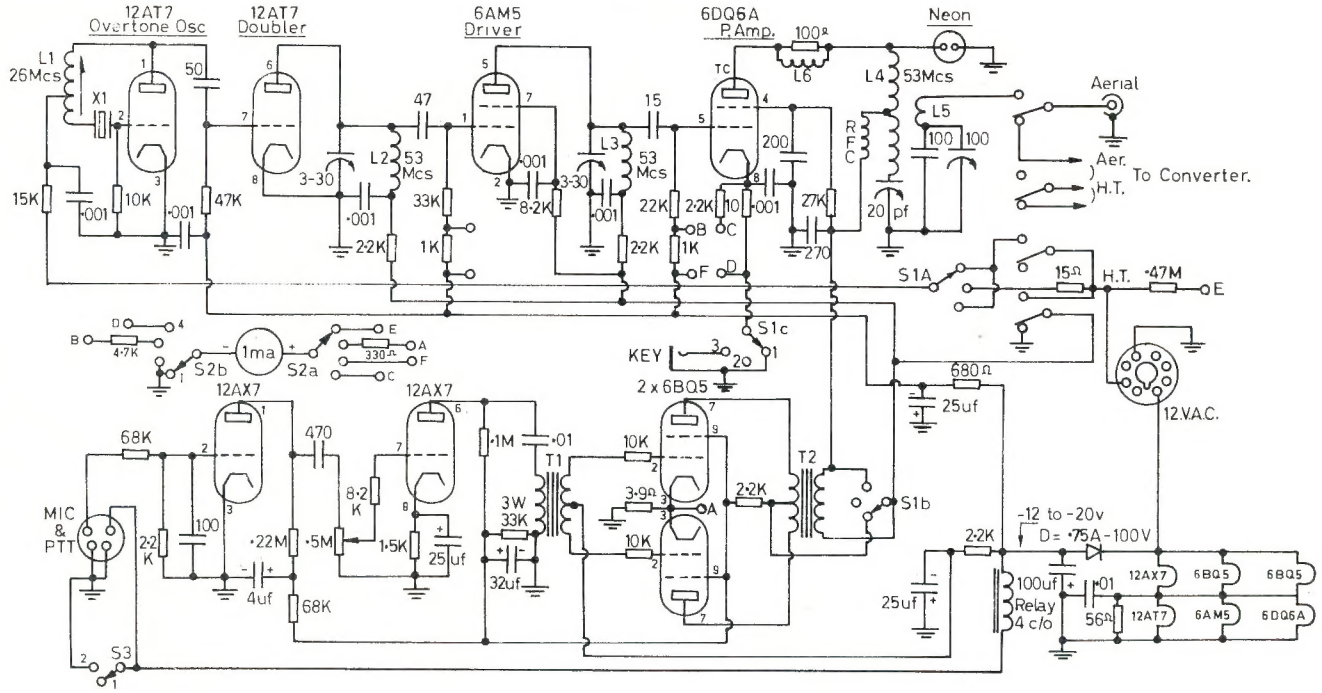


FIG.1. 6 METRE 35-45 WATT AM-CW TRANSMITTER.

S1—1, a.m.; 2, net; 3, c.w.
S2—1, h.t., 0-500v.; 2, mod., 0-100 mA.; 3, drive, 0-5 mA.; 4, p.a., 0-200 mA.

S3—1, Receive; 2, Transmit.
Points marked "A" connect together; "B" together, etc.

SOLID-STATE MODULES*

For Valve Replacement in Communication Receivers

PART ONE

D. R. DRYDEN, G3BKQ

SINCE the introduction of transistors, many Radio Amateurs and S.w.l's have expressed great interest in the possibility of producing a solid-state communication receiver of satisfactory all-round performance, using an existing valve receiver as a basis. The advantages of transistors are well known, and in recent years they have proved to be better than most valves in respect of gain, noise and h.t. current drain.

Replacing valves with transistors **directly** is not practical because of the low input impedance of the transistor, the different nature of the neutralisation problem, and the necessity for complete re-organisation of bias and h.t. supplies.

The advent of the FET offered a possible solution, and the author therefore determined to re-examine the situation. In grounded gate, the FET has a low input impedance, which causes much the same difficulty in matching a tuned circuit as does the

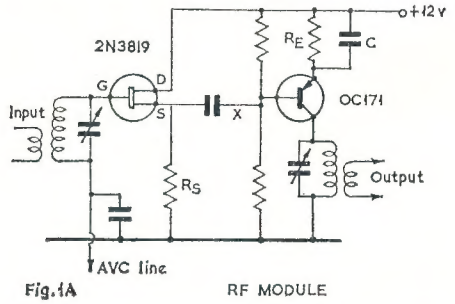


Fig.1A RF MODULE

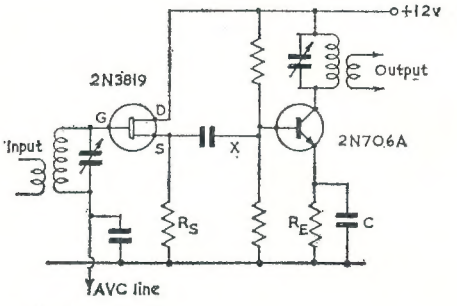


Fig.1B

introduction of a transistor. In grounded source, neutralising a FET is rather difficult if it is to be used in a multi-band configuration, but the input impedance is better than with a valve.

The author therefore designed the plug-in modules discussed in these notes, using the FET as a matching device to produce a high input impedance. This drives a conventional transistor circuit which exhibits high output impedance. **In this way, it is possible to utilise existing tuned circuits, without altering the tuning and tracking characteristics.** Furthermore, the circuit arrangement required is cut to a minimum.

It has also been possible to improve the gain, selectivity and a.v.c. characteristics, and reduce cross-modulation effects to negligible proportions compared with an original valve operated receiver. The modules are suitable for use in any receiver, car radios, and also 2 and 4 metre converters. In the case of the 2 metre converter, the noise figure, gain and cross-modulation performance are outstanding.

Receivers may be modified one stage at a time if required, without affecting the performance of the remaining valve stages. This exercise was actually carried out by the author, to establish the complete interchangeability of the modules with existing valves.

The r.f. modules exhibit high gain, values of 300 at 30 Mc. and 80-100 at 144 Mc. being typical. Usually, if a valve is to be replaced by the device, the gain is reduced to the same as the valve to preserve the overall characteristics of the receiver. The stability of the device against temperature change, and in respect of neutralisation, is very high.

● In this interesting series of articles, our contributor will show how valve stages in conventional communication receivers can be replaced by equivalent transistor units, made up as pluggable modules having the same input-output characteristics as the valves for which they are substituted—thus preserving the general tuned circuit layout and parameters of the original receiver.

This is done by using a combination of FET and transistor, and he shows that these modules can be designed to take care of any usual circuit-substitution requirement. The practical ideas brought out in these articles constitute original work in the field of solid-state circuitry as applied to receiver design, and thus will be of great interest to many readers. — Editor "Short Wave Magazine".

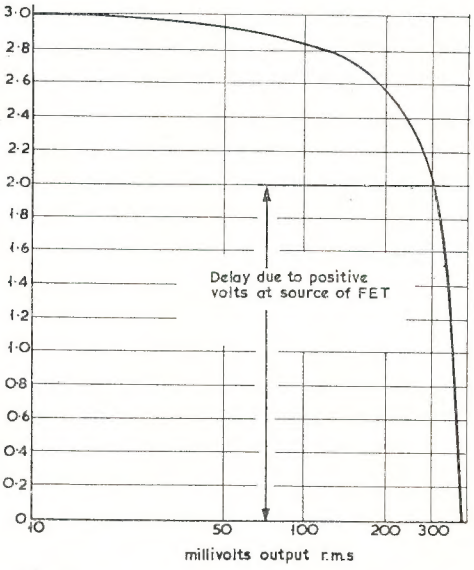


Fig. 1c

Fig. 1C.—In the r.f./i.f. module, this is the input/output curve showing the d.c. variation at gate to a.c. output.

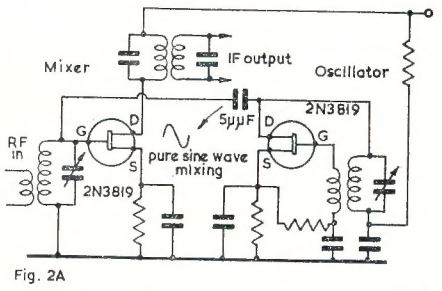


Fig. 2A

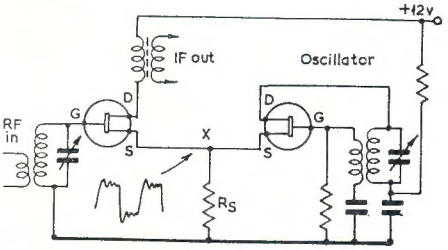


Fig. 2B MIXER OSCILLATOR MODULE

Fig. 2B.—The mixer/oscillator configuration shown in the lower sketch is not recommended because of the bad waveform at point X, which can produce unwanted beats up to 200 Mc.

To illustrate the application of the modules, this article will later include complete conversion data for the BC453/454 Command series of receivers. The ideas set out will enable a scheme of modification for any receiver to be evolved along the same lines. The BC series was chosen for illustration because they are in wide use for mobile applications, as Top Band receivers, tunable i.f's on the 2 metre band, and (particularly in the U.S.A.) for main-receiver i.f's in conjunction with xtal controlled converters. To illustrate v.h.f. applications, a description of a 2 or 4 metre r.f. stage is also included.

R.F. MODULE

The basic circuit of the r.f. module is shown in Figs. 1A and 1B. This will replace r.f. pentodes or triodes, e.g. 6AK5, 6SG7, 6K7, etc. The FET is

* Reprinted from "Short Wave Magazine," December, 1967.

operated as a source-follower, which is coupled to a PNP or NPN transistor as an amplifier with high output impedance. Since point X is at a very low impedance, the transistor does not need neutralising. The FET capacitance C_{DG} forms part of the input tuned circuit, while C_{GS} is reduced to negligible proportions by the voltage gain of the FET stage (0.9). In this way, used to replace any mixer-oscillator valve, e.g. 6K8, 6SA7, or separate mixer and oscillator stages in radio or communication receivers. C_{DG} in the mixer is not troublesome, since the output circuit is tuned to i.f., and in any case, the mixer is highly non-linear. The transconductance of this stage considerably exceeds that of any comparable valve configuration.

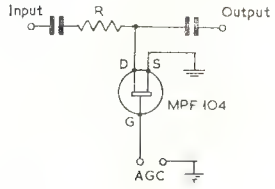


Fig 3A

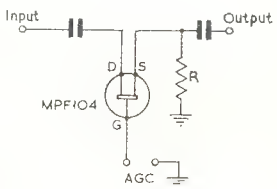


Fig 3B

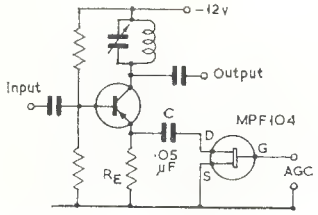


Fig. 3C

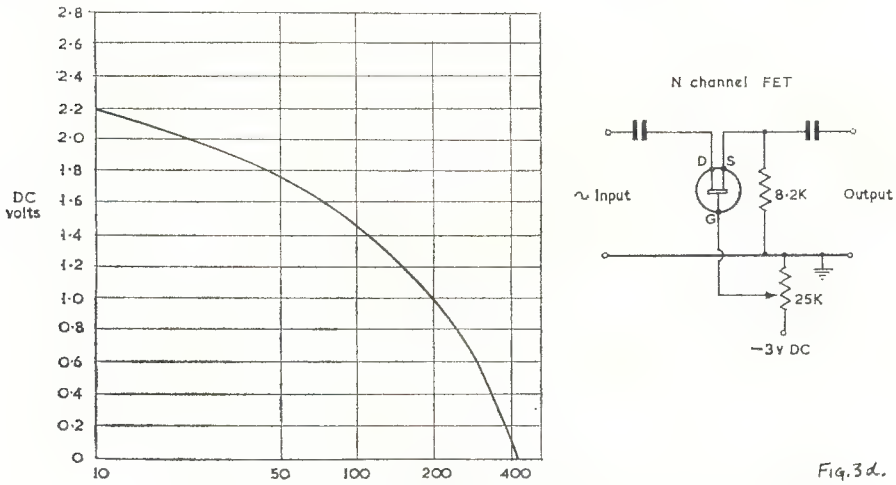


Fig. 3d.

Fig. 3D.—The electronic attenuator mentioned in the text. The curve shows input/output in terms of d.c. variations to a.c. output at 2.5 Mc.

the isolation between input and output is, for practical purposes, complete.

If a.v.c. is required, it can be applied at the gate of the FET, Fig. 1C. This is possible because the voltage transfer characteristic of the FET is curved, due to the low value of the h.t. supply. An a.v.c. signal of —3v. produces a fall in gain of approximately 30 db. This control is best applied where the module is handling low-level signals (up to about 50 mV.) to preserve linearity. For somewhat higher levels, or more rigid control, another circuit (described later) is recommended.

The fixed gain of the circuit may be set by varying R_E, with suitable adjustment of bias to preserve the standing current through the transistor at a convenient level. To realise further gain, R_E can be wholly or partially bypassed. Up to 30 Mc., adjustment of the fixed gain over a range of 5-300 is feasible, if the coils have sufficient Q. At lower frequencies, around 465 kc., the coils have higher Q, and a gain of 800 can be realised. The h.t. supply is at 12v., and the recommended current per stage is about 1.8 mA.

The frequency limit of the device is set by the FET, and bipolar transistors are selected for a given application.

MIXER/OSCILLATOR MODULE

This bears a strong resemblance to its valve counterpart, the basic circuit being shown in Fig. 2A. This may be

A.V.C. AND MANUAL R.F. GAIN CONTROL, USING FETs

In the past, the application of a.v.c. to solid-state amplifiers has presented considerable difficulty. Since the i.f. stages contribute virtually no noise to the total receiver noise with the configuration adopted here, it is feasible to use attenuators to control the i.f. gain. The bilateral properties of the FET below pinch-off make this type of control very attractive indeed, and this is the method adopted.

A FET can be used as a variable resistor by applying d.c. to the gate with zero d.c. voltage on the drain. Provided that the signal voltage on the drain is below a level which approaches pinch-off, this property is preserved. D.c.-controlled attenuators using this principle are shown in Fig. 3A (FET in shunt) and Fig. 3B (FET in series).

A further possibility is to make the FET part of the emitter resistor of a transistor amplifier which then becomes variable and so can control the gain of the stage. This arrangement is shown in Fig. 3C.

VARIABLE ATTENUATION

The circuit of Fig. 3A varies the attenuation over the range 0-60 db. for a d.c. swing of about 3v. However, the distortion of the input waveform is pronounced unless the signal level is very low, and its use would normally be restricted to r.f. stages. Since the noise figure is degraded as the attenuation is increased, its use is therefore not recommended, and other means have been employed in the r.f. stage. Distortion of course precludes its use in the i.f., where the circuit of Fig. 3B is preferred.

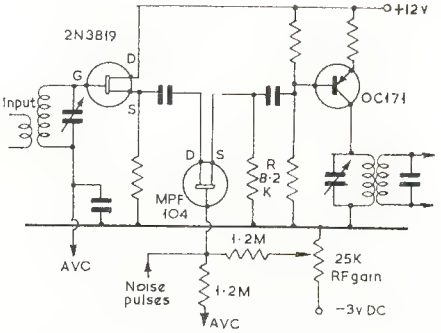


Fig. 4 RF MODULE WITH GAIN CONTROL

Figs. 3B and 3D: This circuit will provide an attenuation well over 60 db., but can only be used up to 2 Mc., owing to capacity effects. As the 60 db. attenuation is obtained for around 2v. d.c. swing, this circuit was adopted for the i.f. control. Noise suppression pulses, manual gain control and a.v.c. may all be applied effectively to this device.

★

Examples of some of the transistorised module assemblies, of the kind discussed in the article, with a size comparison. They can be built up on standard valve bases to be pluggable replacements in the various stages of the receiver.

★

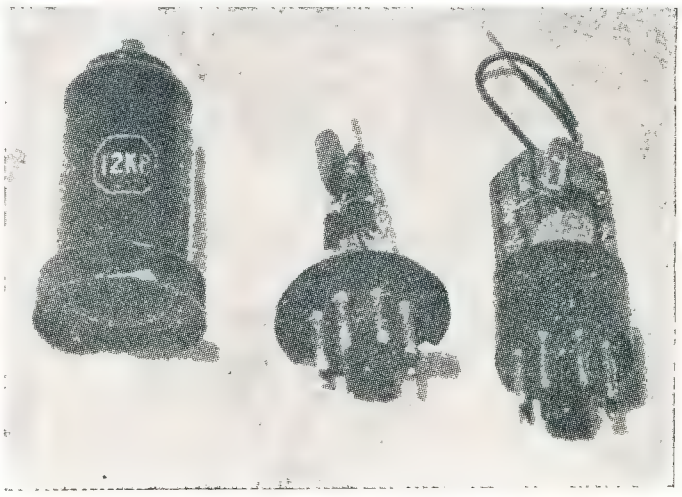


Fig. 3C: This will vary the gain of the transistor stage by 15-20 db. in a typical case, is not frequency sensitive, and does not degrade the noise. The variable resistance of the FET in series with capacitor C alters the negative feedback due to R_E, the gain being maximum when the resistance of the FET is lowest. A swing of about 3v. d.c. is required.

PART TWO*

TRANSISTORISING A BC454

FIVE basic modules are used, one of each being required. They are: (1) r.f. module, (2) mixer module, (3) 1st i.f. module, with electronic attenuator, (4) 2nd i.f. module, (5) b.f.o. module. These are all depicted in Figs. 5, 6, 7, 8. The pin numbers refer to those used on the corresponding valve bases. These modules can be assembled on an octal valve base.

American metal-cased types of valve (e.g. 6SG7, 6SJ7, etc.) are easily stripped of their electrodes and leads, and the transistors and components then mounted on the base. The metal envelope is replaced to produce a well-screened unit. Examples of such assemblies are shown in the photograph in Part One of this article.

The audio amplifier is either constructed on fibre-glass board, and mounted in the rear of the receiver in place of the dynamotor, or constructed on the modular principle and plugged in instead of the 12A6 output pentode.

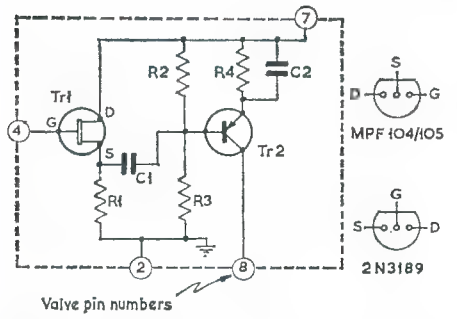


Fig. 5

Fig. 5.—R.f. stage and 2nd i.f. module, with connections to replace a 6SK7 valve. Values are: C1, C2, 0.001 μF. (C2 for a 2nd i.f. only); R1, 3.3K; R2, 22K; R3, 100K; R4 (r.f. stage only), 1K; R4 (2nd r.f. only), 330 ohms; Tr1, 2N3819, MPF104 or MPF105; and Tr2, OC170/171.

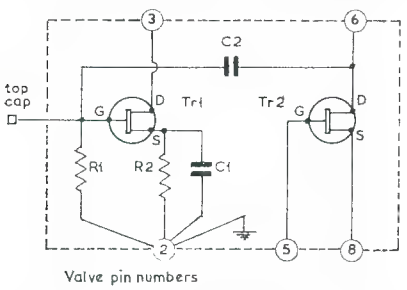


Fig. 6

Fig. 6.—Mixer and oscillator module, to replace 6K8. C1, 0.001 μF.; C2, 3-5 pF.; R1, 1 megohm; R2, 10K; Tr1, 2N3819 or MPF105; and Tr2, MPF104 or MPF105.

* Reprinted from "Short Wave Magazine," February, 1968.

R.F. MODULE WITH GAIN CONTROL

A suggested practical circuit incorporating an attenuator-type control is shown in Fig. 4. The attenuator is introduced between the source of the FET and the base of the transistor to minimise side effects due to the introduction of the attenuator. It is recommended that this module should form the first i.f. of the completed receiver.

• Continuing this interesting article, the author takes the example of the BC454—a well known surplus type, in wide use—to show how its various stages can be replaced, without undue complication but with results that can make even an old design like the BC454 into a very much better receiver, with improved gain and selectivity and a much lower inherent noise figure. This article should be read with Part One, so that all points are clear.

Alternatively, a cheap amplifier could be purchased, since there are several suitable ones available. The original BC453/4 circuit is modified as in Fig. 9, and indicates the location of the modules, and the extra circuitry required for the detector, a.v.c, r.f. gain control, etc.

All the heater leads are removed from the underside of the unit, together with the screen h.t. leads. All the suppressor connections are also taken off. It is strongly recommended that the potted capacitors be discarded, and only three of the existing resistors are used in the modified circuit. The b.f.o. coil is retained.

The r.f.-mixer-oscillator coil unit is removed by unfastening the two retaining screws at the side of the chassis and lifting it out to expose the coil plugs. These are disposed as in Fig. 10. A 2.5 mH. r.f. choke is connected on the oscillator plug to the blank pin 4, using a covered lead. The other end of the r.f. choke goes to the 12v. h.t. line, via a zener diode. The coils may now be replaced.

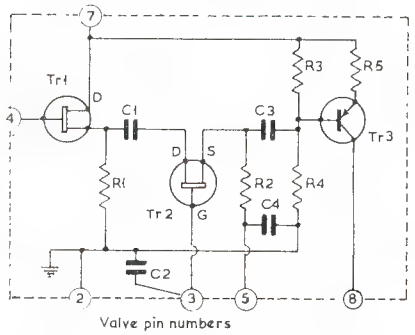


Fig. 7

Fig. 7.—First i.f. amplifier with electronic attenuator. Values: C1, C3, C4, 0.001 μF.; R1, 3.3K; R2, 8.2K; R3, 22K; R4, 100K; R5, 1K; Tr1, 2N3819; Tr2, MPF104; Tr3, OC170/171.

The 12v. h.t. line and decoupling networks are rewired and fitted according to the modified diagram in Fig. 9. Small resistors and condensers common to transistor radio practice are eminently suitable. The h.t. end of coils L2 (r.f. stage anode), L8 and L10 (i.f. coils) are earthed to the chassis.

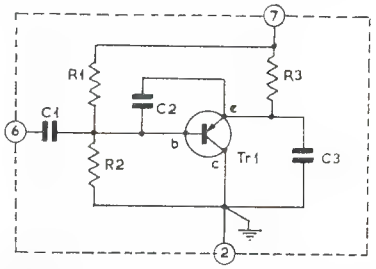


Fig. 8

Fig. 8. -The Vacar circuit b.f.o. module, excellent for short and long-term stability and specially suited to single-frequency working. C1 is 100 pF.; C2, C3, 0.001 μF.; R1, 4.7K; R2, 10K; R3, 2.2K; and Tr1, OC170/171.

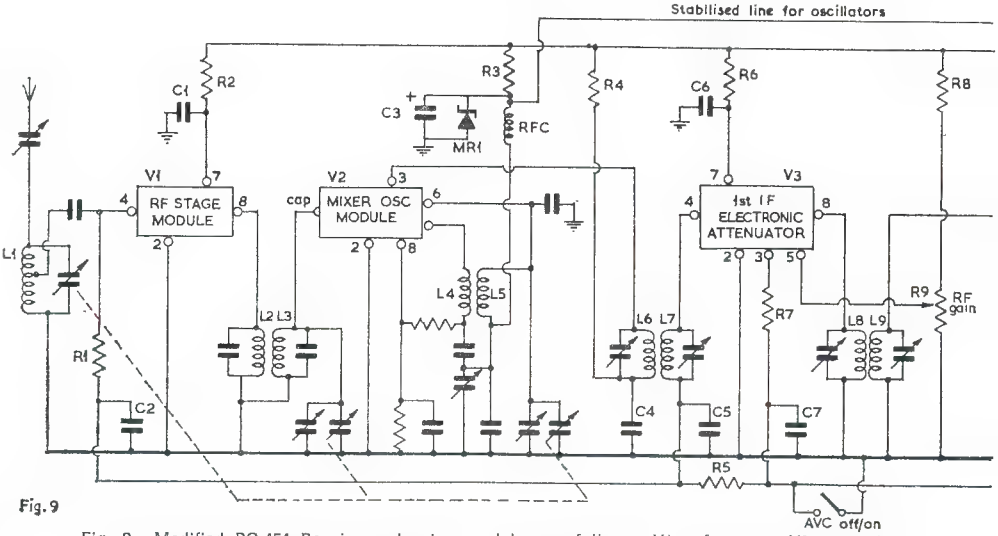


Fig. 9

Fig. 9.—Modified BC-454 Receiver, showing modules as follows: V1, r.f. stage; V2, mixer/osc.; V3, 1st i.f. and attenuation; V4, 2nd i.f.; V5, b.f.o. module; and V6, transistor amplifier.

Notes: Only added components are shown here. Parts differing from the original are alone numbered. R.F.C. is a 2.5 mH. r.f. choke. A pair of PP1 batteries (6v. each) will suffice for power.

A.v.c. is applied to the r.f. stage and to the first i.f. stage, as shown in the diagram. The b.f.o. coil is removed and an additional 220 pF. condenser is connected in series with C27 across the coil. The b.f.o. coil is then replaced, also this winding has a lead connected to pin 6 of V7, which is retained. The remaining leads are removed, and the end of the coil earthed down, as in Fig. 9. The remaining modifications are self-evident, and although the job looks complex, in practice it is easy and quick once the modules are assembled ready to plug in.

CHECKING CURRENT DRAIN

Check the h.t. winding carefully, and switch on the h.t. (12v. d.c.) with no modules in place. Check the h.t. current, which should, at this stage, be about 10 mA. Then plug in the modules one at a time, starting with the r.f. module. The current increments should be as follows: R.f. stage, 1.8 mA.; mixer-oscillator stage, 4.0 mA; 1st i.f., 1.8 mA.; 2nd i.f. stage, 3.0 mA.; audio amplifier, 1.5 to 3.0 mA. (for the recommended circuit). The total current should be about 17-20 mA. with no signal applied to the receiver.

If the aerial is now connected, the r.f. and audio gains turned up, and a.v.c. applied, it should be possible to tune in a signal. Select a weak one, and peak the i.f. coils. The tracking of the oscillator coils will be unchanged, but the **input** trimmer and **mixer** trimmer will require adjusting to give maximum output. The alignment is now complete.

A strong signal will increase the current drain to 50-100 mA., due to the class B audio output stage opening up. Owing to the great increase in selectivity, tuning will be very sharp. Also the noise figure of the modified receiver will be much lower than the original, which can be deceiving. Disconnecting the aerial seems to leave the set dead. However, a short length of wire connected to the aerial socket will immediately produce an output. The BC454 is particularly useful as a tunable i.f. amplifier for a 2 metre or 70 cm. converter.

Note that the above procedure calls for weak signals to be located at maximum r.f. gain, a.v.c. A very strong signal will reduce the gain of the set by 100 db., a.v.c. on. The range of the manual r.f. gain control is around 32 db. If a single module is used to try out the effect of the modification of a single stage, care should be taken to disable the a.v.c. applied to the module. Valve receivers require a very much higher a.v.c. voltage than do the modules, and if the existing a.v.c. is applied, the module will probably be almost cut off, and its performance will appear disappointing. As the number of modules is increased, this problem becomes less acute.

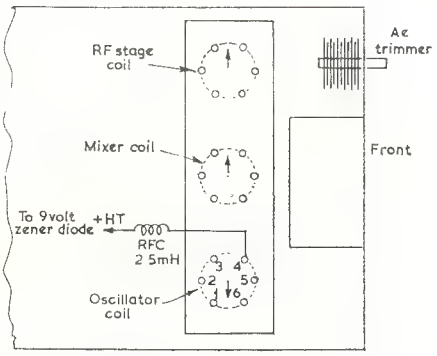
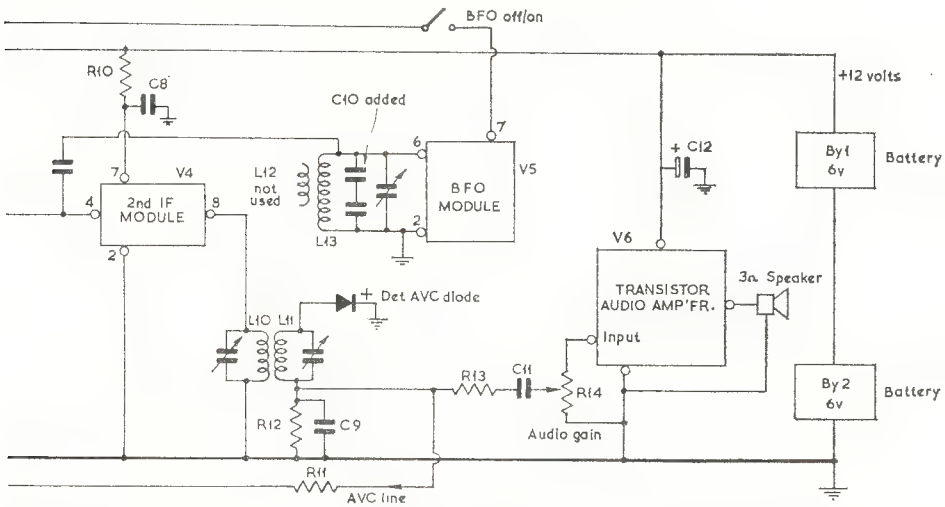


Fig. 10 Underside of BC454

Fig. 10. Underside of BC454, to locate items mentioned in the text.

The overall gain attainable exceeds anything which can be realised using valves, but owing to the existing layout of the coils, the usable gain is limited by regeneration problems. As described, the modified set produces useful output for less than 1 μV. in.

A 2 metre conversion for the r.f. stage will be shown later. This circuit produces a gain of 80-100, with a noise figure of around 2 db.



C1, C2, C4, C5, C6, C8—0.05 μF.
C3—10 μF. 12v.
C7 -0.01 μF.
C9, C10—220 pF.
C11 0.1 μF.
C12—250 μF. 16v.
R1, R5, R7, R11—1 megohm.
R2, R4, R6, R10 470 ohms.
R3 220 ohms.
R8 33K ohms.
R9- 25K ohm potentiometer.
R12 500K ohms.
R13—50K ohms.
R14—250K ohm potentiometer
Mr1—9v. zener diode.
Mr2 OA5 diode.

1968 John Moyle Memorial National Field Day Results

SECTION A—SIX-HOUR DIVISION
Award Winners

VK2ASZ/P	474	points
VK3JO/P	20	,,
VK4PJ/P	131	,,
VK5TN/P	184	,,
VK6ZFY/P	129	,,

Other Entries

VK2ZCF/P	124	points
VK2RJ/P	45	,,
VK5ZEJ/P	75	,,
VK5TL/P	10	,,

SECTION B—SIX-HOUR DIVISION
Award Winner

VK2ZJM/P	87	points

Other Entry

VK2YB/P	36	points

SECTION E—SIX-HOUR DIVISION
Award Winner

VK2ZO	80	points

SECTION A—24-HOUR DIVISION
Award Winners

VK1VP/P	115	points
VK3AMK/P	134	,,
VK4IO/P	493	,,
VK5QX/P	523	,,
VK7ZKJ/P	60	,,

SECTION B—24-HOUR DIVISION
Award Winners

VK3EZ/P	193	points
VK5ZF/P	202	,,

SECTION C—24-HOUR DIVISION
Award Winner

VK2BCC/P	502	points

SECTION D—24-HOUR DIVISION
Award Winners

VK2AAH/P	6400	points
VK3ATL/P	2140	,,
VK6ZBF/P	253	,,

Other Entries

VK3LC/P	1534	points
VK3KO/P	1342	,,
VK3RV/P	223	,,
VK6ZFG/P	249	,,

SECTION F—24-HOUR DIVISION
Award Winners

VK2—P. Linsly	534	points
WIA-L3308	631	,,
WIA-L5088	755	,,
WIA-L7031	515	,,

Other Entries

WIA-L3042	485	points
P. Forbes	715	,,
WIA-L5097	200	,,

Incorrect Logs
L. Milne, D. Lloyd

Check Log
VK3TB

— . . . —

SLOW SCAN T.V.

A sizeable group of Canadian Amateurs in Ottawa are interested in slow scan t.v., according to VE3PW. The system used allows signals to be recorded on tape and played back through a monitor scope, or viewed direct on a 5BP7 tube. The group is building monitor scopes as described in March 1964 "QST". The address of VE3PW is 191 Clare St., Ottawa 3, Canada. Interested Amateurs are invited to write to him.

Some Thoughts on "V-V" Beams for 14 and 21 Mc.

C. WHALLEY,* VK6KK

Whilst paying a visit to England in 1964 I heard stories of a rather new type of antenna which, according to rumour, was working DX extra well.

Tracking down the designer, Neville Jackson, G3IAD, I made my way to his home only to find that he had left for abroad a short time previously. I talked with his wife and also examined, as best I could, his 14 and 21 Mc. antenna in the back garden of his home. I purchased the small booklet he has written on this type of antenna for the Amateur bands and later came back to my home in Western Australia.

Owing to working in the far north of this State, I was unable to build one according to his directions until mid 1966. This was built to the following dimensions:—

14 Mc.—

Driven Element, 36 ft. 4 in. total length.

Director, 34 ft. 5 in. total length.

21 Mc.—

*Driven element, 23 ft. 7 in. total length.

*Director, 22 ft. exactly total length.

(* The measurements given **do not agree** with the ones in the booklet, but were found to give the s.w.r. figures given later.)

The elements are made from aluminium tubing, fitted in fishing rod style, and mounted as suggested.

This was put on the air and the DX started to be worked as quite never before with many complimentary remarks about signal strength from my 145 watts p.e.p. Unfortunately, after about three months the vees started to lean over and whilst this made no apparent difference to the working of it, I could see that before long the whole thing would collapse.

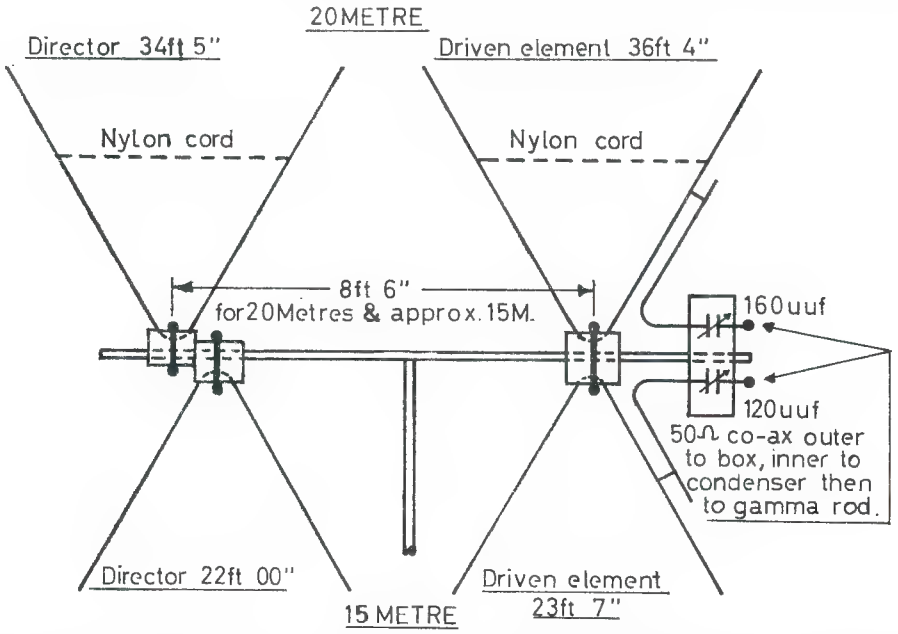
STRENGTHENING THE VEE

After much thought and talks with others about how to build it strong enough, the following course was adopted.

The two pieces of aluminium tubing that were to be bent in the form of the vee for the base of the 14 Mc. section were obtained in fairly thick gauge tube, 6 ft. long. A piece of **solid aluminium rod** which fitted neatly **inside** this tube was obtained, this was 3 ft. long and was centred inside the 6 ft. length. The whole then being **cold bent** to the angle of 90 degrees. The other lengths of tube were then packed with wood dowelling rod before being screwed into position. Remember that you have over 17 ft. on each leg poking up skywards with its **only support** at its base.

The previous method of using aluminium plates to fasten the vee to the boom was abandoned and aluminium clamps of the type used by scaffolding erectors were obtained, packing pieces made to fill up the extra width of the clamp taking the base of the vee, and then the vees were mounted. The clamps were screwed up tight and a bolt passed right through the clamp, the packing pieces, the base of the vee and the boom, a nut was put on the bolt and tightened. A nylon cord was placed across each of the upper vees (the 14 Mc.) about 4 ft. from the top (this makes no difference even in heavy rain) and after around six months' use, with some gales, etc., to test it, it is still in position apparently as firm as ever.

* 53 Arnott St., Trigg Island, W.A., 6020.



MORE DETAILS

There is **no insulation** whatever between the vees, the boom, and whatever the boom may be fastened to (plumber's delight type).

The driven elements are fed each with its own **gamma match**, fed by 50 ohm co-axial cable. For the 14 Mc. section the gamma match feeder from the box is kept around 5 inches away from the element it is feeding and feeds into it 4 ft. (approximately) up the leg. For 21 Mc., the same distance between the feeder and the element, but this feeds at 3 ft. (approximately) along the leg.

The boom is 10 ft. long to allow for the gamma match box, etc., and the distance between the director and the driven element is 8 ft. 6 in. This distance is the same for both 14 and 21.

When having the portion forming the base of the vee bent, have a six inch piece in the centre left straight as the clamp will fit around this for attachment to the boom.

S.w.r. on 14.250 Mc. is 1:1; at 14.010 Mc. it is 1:1.6. On 21.500 Mc. it is 1:1.

Much interest was aroused when this was first erected and the old solid question was, "How does it compare with other beams?"

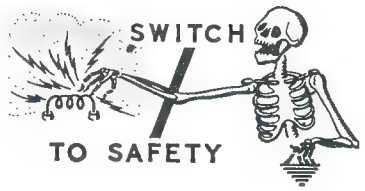
This may help to answer.

With my friend VK6SM, whose home is about 150 ft. above sea level with a beautiful clear "getaway" in all directions, and who uses a 3 element full length close spaced Yagi for 14 Mc., on a 34 ft. high tower, tests were made with VK5, VK7 and W6. They were not told any details but just asked to give S meter readings. In all cases the reports were identical. This, despite the fact that my home is only about 10 ft. above sea level, in a hollow with trees right across the Eastern side (the way we were pointing for these tests) which are much higher than the antenna. The boom is 24 ft. above ground. We were, of course, both using the same power.

This short summary has been made owing to the number of requests for information from many sources. There are now three of this type working in the Perth area and the general opinion is that it is the best tried up to now.

My sincere thanks go to Mr. Jackson, G3IAD, for giving me the details of what has proved to be the best DX antenna I have ever used.

More detail than I have given is to be found in Mr. Jackson's booklet, "V-V DX Arrays" which can be obtained from Vee Vee Beams Ltd., Morcambe Lancs., England.



MORSE CODE PROFICIENCY

(OR WHY "GOOF" AT 10 W.P.M.)

Some time ago, an article appeared in a popular magazine in the States, headed "Johnny never even made it, at 14 w.p.m." (13 w.p.m. is the General licence requirement, U.S.A.)

Sadly, here in Australia, there are probably several Johnnys who will "Goof" at 10 w.p.m. in the coming Code Examinations. Why? Let's look at a few of the reasons why, and for the sake of simplicity, divide the comments into receiving and sending.

RECEIVING THE CODE

Receiving is obviously the bigger stumbling block, but need not be so at all if one's mental approach is right. Those who sit down **seriously** to learn the Code (not just fiddle with it), must adopt the right psychological attitude to the task at the outset. The mental habits formed during this early period of 10 weeks or so, or prior to this, go a long way to make the passage to the ticket, and beyond, plain sailing. Too many, at this beginning stage, exhibit what might be called a "Bogey Syndrome", or a mild Morse neurosis—and it is this that beats 'em ere they've begun. Attitudes of tension, timidity and inferiority complex are felt within, and manifest themselves externally, as every Morse class instructor knows.

The oft heard expression, "I'll lick this thing if it kills me", is hardly the correct mental approach. It indicates that the user sees the mastery of code as something of an unsurmountable obstacle. In truth, he is trying to visualise himself achieving too much, too soon; subsequently, he lacks confidence. A young child learns a new language word by word, or step by step, but very easily and often quickly—simply because it has no subconscious, conflicting inhibitions to prevent it, or slow it up. Any beginner at the code will come along much faster if his doubts and tensions to it are resolved at the start. These inhibitions, if strong enough, can completely prevent any progress at all. This is where it is of prime importance that starters have access to tuition, by skilled instructors, who have the ability to impart confidence and correct procedures. True, many by dint of their own determination are completely self-taught operators, but many also fall by the wayside simply because no one was at hand to get them started sufficiently.

So, if you have decided to take the code test, these following pointers might help a little.

Firstly, don't set yourself a definite time limit, say, six months. This is the first "bogey" to be mentally ousted. You will come along at your own natural pace, depending on the amount of practice, etc. It may take 12 months.

Next, when about to receive code, be certain you are physically comfortable—unless you are, your concentration will suffer, be you aware of this or not.

Then **don't** attempt **long** practice sessions. Knock off immediately the mind begins to boggle at the "dits and dahs". Best practice method is a little, and often; perhaps two or three half-nour stints per day. A common complaint, is the self-criticism "I can't concentrate for long". This obviously creates another "bogey" in the minds of young aspirants—don't let it cause concern. Come exam. time, you will cope well enough, if you've practised enough. It must be remembered that the ability to concentrate is very much a personal thing, with its broad basis in heredity-environment complex. If your daily bread-winning work does not require too much concentration, the new task of the code may well tire you easily. Even those whose working life is mostly concentration can often only apply themselves in short bursts. Rest assured, as you progress, this will give you no concern, **but**, do not attempt to learn code when feeling mentally flat.

Another Bogey. Many learners express their inability to copy code more than a letter or two, behind the sender. They point out that the pros can trail a whole sentence, or more. This is another self-created and unnecessary obstacle in the minds of beginners. Here again, they are allowing their thinking to wander into pastures they've not yet experienced—speed. The early beginner starts out by hearing a code letter, dit-dah-dit. This must be transformed by conscious mental effort into the letter R. The unpractised and untutored mind does this, at first, slowly and ponderously. The old pro on hearing "dit-dah-dit" transforms it into the same letter, **but**, by dint of prolonged practice, there is no conscious juxtapositioning in the mind at all—in other words, it becomes automatic and flows off the end of his pen, just as all other habits become effortless.

After listening to many troubled comments on this, it is apparent that this, too, is a personal thing. Some minds are just more computer-like than others, i.e. more adept at this necessary transformation. Herein lies the ability of some to receive at 50 w.p.m., whereas others will never exceed 20-25 w.p.m. (which is quite fast enough). But this is no argument to say that 10 w.p.m. is not attainable. It is, and easily so, but with **more** practice, perhaps. If progress seems slow after six months of honest application, there's no reason to despair, because code proficiency has a habit of taking on coherence rather suddenly when it does commence. In other words, the mind eventually gets the message.

Individual and Personalised Instruction: This is the only way for the initial beginner but for so many impossible, such as those in country areas, etc. So only the best alternative arrangements can be made. Having grasped the dit-dahs of the alphabet to the point of correlating the simplest words, one should for optimum progress, be coached along at a speed slightly in excess of what one can handle comfortably. Just fast enough so that not every letter is received.

When a letter is muffed, **don't fiddle with it.** Learn the trick of dismissing it immediately and instantly preparing the mind for the next. At first you will probably lose two or three in a row, but do not be deterred. Try and receive original copy all the time. Repetitive paragraphs or sentences are useless in speed promotion.

The old cliche "that anything worth having requires effort" applies truly to code mastery. If you want your ticket, much practice is needed—and daily.

Come examination day, if you are ill prepared, you will take with you into the "den of horrors" a psychological barrier a mile high. You know you must do your best to pass. Consequently butterflies in the diaphram region reduce your efficiency. Why tear yourself apart internally like this when to sit well prepared is to know that you will pass even if you don't produce your best effort on the day. There's no more comfortable and confident feeling than this.

It would be necessary to be able to receive word perfect 12-13 w.p.m. for at least three or four weeks prior to the test to be sure of 100 per cent. copy at 10 w.p.m. in a strange environment.

SENDING

After observing some at work at the key it is obvious why the "on air" effect brings the advice "Try the left foot". It seems unbelievable, but many don't monitor their own sending. No letter and spacing formation can remain cogniscent and copiable under these conditions of sending. If you are going to be a code operator for the next 30 years it will be necessary to monitor every dot and dash, and develop the objective habit of being your own harshest critic in the process. Never imagine you will eventually reach the age of adeptness where a monitor is no longer a must.

It is wise when at practice to simulate exam. room conditions. Here in VK4 this means earphone copy (not speaker), with an audio oscillator at 1 kc. or a little higher and with the volume at its comfortable lowest. Excessive db. is of no help. It only produces a "limiter like" effect in the ear drums. The P.M.G. type key should be mounted at the edge of the table (this is Departmental), but you can if preferred operate the key in a position best suited to you (such as those with some slight physical handicap).

Assuming you are right handed (reverse the procedure for left handed), sit facing the key so that the shaft is pointing just past your right side and when you reach out to touch the knob, your forearm should be level or horizontal and the angle formed by the elbow 90 degrees or a shade more. The elbow should not be tucked tightly by the side nor held away from it. Just let it hang in a neutral position. Never sit too low so that one has to reach up for the key. This quickly produces fatigue. It is better to err by sitting too high than low. Key point spacing and bar spring tension should be set at an optimum minimum, i.e. not so close and light as to produce forearm tension in an effort to control it, nor so gappy and springy as to make key manipulation hard work and choppy. Forearms and wrists differ so radically in weight and strength that only experiment can produce the right setting for smooth sending.

Here again the same rules of concentration apply. Immediately the arm or wrist shows fatigue—stop. In the beginning this will happen within minutes, but practice produces surprising stamina.

Don't try and force yourself into speed—this is a fatal error. Start by sending one letter at a time, with a slight pause between. Like the young child learning a new language, pace simply comes as the result of practice.

The habit of correct character formation must be developed right from the start, and of course for optimum results, as stated before it is best if one has a professional operator to point out and correct mistakes. Sloppy sessions of practice sending are to be avoided. There will be unmistakable overtones of it remaining in a fist for a long time afterwards.

When in the exam. room take your time to get comfortable. Re-read what you have to send and make sure you can mentally cope with any rarely used characters such as the £ sign, etc. Adjust the key to your own liking by a little practice run. As stated before, if you are well prepared it should be a "piece of cake".

A FINAL COMMENT OR TWO

Rhythm sensitivity is a great asset in receiving code. Test yourself with someone who has a musical instrument. Get him to mix minims' and semiquavers' in lots of four or more and try yourself out repeating the long and short of it. It is rare, but there is the individual who is rhythmically dead.

To facilitate the effort of mentally turning dit-dahs into letters, some try what might be called, for want of a better description, "the phonetic association of sound". It works this way. Instead of repeating the alphabet to oneself in dit-dahs (never dot-dash, please), one tries to repeat audibly to oneself the particular dit-dah combination, such as the letter B as Bee-b-b-b; for M, Mm-mm. Or again for Y, Yi-we-yi-yi. This is a gimmick for beginners only. I doubt its value when one has to increase speed.

Lastly, each day as you go about the bread winning chores, impinging on the eyes there is a galaxy of signs, ads. on hoardings, street names and other directions of all sorts. These can be used to improve our code. Run through these in dits and dahs. It's splendid mental practice or conditioning.

If you are still unconvinced you'll make it at 10 w.p.m., take heart from the VK4 who reputedly sat thirteen times before he made it. (This probably has been stretched a little by the re-telling). Maybe the Department, out of respect for his intestinal fortitude and determination gave it to him.

At the other end of the scale is the ZS who I am told made it in a matter of days from scratch. He was a professional musician of high ability.

All the above is meant only as a pointer or a tip or two to make the code exam. easier. Much more can be said but obviously space does not permit.

There is one LAST word for Morse Code Proficiency, it's "PRACTICE".

—Alan Shawsmith, VK4SS.

— . . . —

"CONCURSO MEXICO 1968"

Precis Rules for Mexican Contest

Aim: To contact as many Mexican stations as possible. Note that prefixes 4A1, 4A2, 4A3, etc., may be used in place of XE1, XE2, XE3, etc. Operation from XE4 through XE8 is expected for the Contest.

Time: 0001 hours GMT, 21st March, 1968, to 2359 hours GMT, 31st December, 1968.

Bands: 3.5, 7, 14, 21, 28, 52 and 144 Mc. Cross-band contacts are not valid but the same station may be worked on different bands.

Modes: C.w., a.m., s.s.b. and r.t.t.y. Cross mode contacts are not valid. However, each station may be worked on each mode on every band except that s.s.b. and a.m. will be considered as the same mode.

Scoring: One point per valid Mexican contact.

Logs: Logs must contain call, date, band, mode and report. Send to L.M.R.E., Box 907, Mexico D.F., Mexico, before 31st March, 1969.

IMPORTANT RULES CHANGE FOR W.I.A. W.A.S. AWARD

New rules for the W.A.S. Award will apply as from 1/7/68 and no further applications will be accepted under the old rules after 30/6/68. The following is the full text of the new rules and intending W.A.S. applicants are requested to read these through carefully before making their application.

W.I.A. WORKED ALL STATES (AUST.) AWARD

OBJECTS

1.1 This Award has been created in order to stimulate interest in the v.h.f./u.h.f. bands and is of a high standard to fully acclaim the proficiency of the recipients on their achievements.

1.2 This Award, to be known as the "Worked All States (Aust.) Award", will be issued to any Amateur in Australia or overseas who satisfies the conditions following.

1.3 A certificate of the Award will be issued to applicants who show proof of having made two-way contact with the specified areas of the Commonwealth of Australia. Additional credit will be given for proof of contact with overseas countries, viz. New Zealand or Papua Territory. Countries, for the purposes of this Award, are set out in the Australian D.X.C.C. Countries List.

REQUIREMENTS

2.1 Contacts must be made on the v.h.f./u.h.f. bands 52 Mc. and above (Bands 8 and 9). Contacts made on 50-52 Mc. prior to 1/4/64 will count towards the 52 Mc. Certificate.

2.2 One verification from each of the following areas of the Commonwealth of Australia is required:—

(a) Australian Capital Territory.
(b) New South Wales.
(c) Victoria.
(d) Queensland.
(e) South Australia.
(f) Western Australia.
(g) Tasmania.
(h) Northern Territory.

In all, eight (8) verifications are required.

2.3 It is possible under these rules for one applicant to receive one Award for each of the Authorised Bands between 30 and 3,000 Mc.

OPERATION

3.1 All contacts must be two-way contacts on the same band and crossband contacts will not be allowed.

3.2 Contacts may be made using any authorised type of emission for the band concerned.

3.3 Portable operation will be permitted provided that the portable location shall be in the State in which the licence was granted and in the call area in which the licence was granted in the case of overseas operation.

3.4 All contacts must be made in accordance with the Regulations laid down in the "Handbook for Operators of Radio Stations in the Amateur Service" or its successor for Australian stations or in accordance with those Regulations applying in the country of the applicant in the case of overseas stations.

VERIFICATION

4.1 It will be necessary for the applicant to produce verifications in the form of QSL cards or other written evidence showing that two-way contacts have taken place.

4.2 Each verification submitted must be exactly as received from the station contacted, and altered or forged verifications will lead to the disqualification of the applicant.

4.3 Each verification submitted must show the date and time of contact, type of emission and frequency band used, the report and the location or address of the station at the time of contact.

4.4 A check list must accompany every application setting out the details for each claimed station in accordance with Rule 4.3. If any contacts were made whilst portable, this must be stated and the portable location given. The applicant must also state whether they are members of the W.I.A. or not.

APPLICATIONS

5.1 Applications for membership shall be addressed to the "Federal Awards Manager, G.P.O. Box 2611W, Melbourne, Vic., 3001," accompanied by the verifications and the check list with sufficient postage enclosed for their return, registration being included if desired.

5.2 A nominal charge of 25c, which shall also be forwarded with the application, will be made for the issue of the certificate to successful applicants who are non-members of the W.I.A.

5.3 Successful applicants will be listed periodically in "Amateur Radio". Members wishing to have their verified country totals listed over and above those submitted at the time of application for membership, will notify these details, in writing, to the Federal Awards Manager.

5.4 In all cases of dispute, the decision of the Federal Awards Manager and two officers of the Federal Executive, W.I.A., in the interpretation and application of these Rules shall be final and binding.

5.5 Notwithstanding anything to the contrary in these Rules, the Federal Council of the W.I.A. reserves the right to amend them when necessary.

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NEW CALL SIGNS

FEBRUARY 1968

VK1WL—L. R. Hodge, "Lawley House," Barton, 2600.
VK1ZAV—D. R. Avdall, Cottage 48, H.M.A.S. Harman, 2600.
VK2AHS—N. E. Parsons, 120 Ashley St., Chatswood, 2067.
VK2BJN—J. M. Winsor, 8/52 Musgrove St., Mosman, 2088.
VK2BNK—A. K. Nikku, 89 Cambridge St., Canley Heights, 2166.
VK2BRK—R. R. Kearney, 6 Kurnell Rd., Cronulla, 2230.
VK2ZJB—S. J. Brown, 5 Kentwell Ave., Thornleigh, 2120.
VK2ZOJ—A. H. B. Brodrick, 18 Rhoda Ave., Wagga Wagga, 2650.
VK2ZVU—J. Trenning, 48 Bexley Rd., Campsie, 2194.
VK3AHP—J. M. Hamilton, 37 Byfield St., Reservoir, 3073.
VK3ZVO—A. A. Saunders, 396 Buckley St., Essendon, 3040.
VK4ZGD—D. J. Galloway, 72 Charlotte St., Aitkenvale, 4812.
VK5AV—E. J. Mulholland, 19 Stuart Rd., Dulwich, 5065.
VK6GG—H. E. Rhodes, 797 Canning H'way, Applecross, 6153.
VK6LD—L. A. Dancey, 34 Clianthus Way, Koongamia, 6056.
VK6TW—R. Thyer, Flat 118A, Graylands Hostel, Alfred Rd., Graylands, 6010.
VK9RY—R. L. Johns, Station: Lot 1, Section 22, Gere Gere St., Boroko, P.; Postal: C/o. Public Service Commissioners Dept., Konedobu, P.

CANCELLATIONS

VK1RJ—R. L. Johns. Now VK9RY.
VK1ZSW—A. S. Waight. Not renewed.
VK2WL—L. R. Hodge. VK1WL.
VK2BCR—J. K. Ridgway. Deceased.
VK2ZNK—A. K. Nikku. Now VK2BNK.
VK3BH—Benalla High School Radio Club. Not Renewed.
VK3FC—R. E. W. May. Transferred to N.S.W.
VK3GE—G. E. Every. Deceased.
VK3AMG—J. M. Barry. Not Renewed.
VK3ASS—East Sale R.A.A.F. Radio Club. Not Renewed.
VK3ZGL—R. F. Lloyd. Not Renewed.
VK3ZON—A. T. Farrell. Transferred to S.A.
VK4ZGC—McG. McCullough. Transferred to N.S.W.
VK5ZCQ—J. A. McLachlan. Transferred to New Guinea.
VK6FT—J. F. Reid. Not Renewed.
VK6ZAH—J. D. Holt. Overseas.
VK6ZGA—L. N. Smith. Transferred to N.S.W.
VK8ZBB—A. H. B. Brodrick. Now VK2ZOJ.

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OBITUARY

LEN SAWFORD, VK5LF

The VK5 Division regretfully announce the passing of Len Sawford, VK5LF, early in April.

A member of the 1932-33 Council, holding the position of Technical Officer, later becoming one of the three Divisional Trustees, he was extremely active in the early days of "slop rectifiers" and the like. Although he transferred his interest and activities to the audio side post-war, he still remained keenly interested in the VK5 Division; and at the time of his death, was seriously considering returning to activity on the air in view of his coming retirement.

A keen Rotarian, his quiet and unassuming manner won him many friends, and to his sorrowing wife and family, the VK5 Division extends their deepest sympathy in their bereavement.

DX

Sub-Editor: ALAN SHAWSMITH, VK4SS
35 Whynot St., West End, Brisbane, Qld., 4101

The bands seem to be working really well. Twenty and fifteen probably being the best. The s.p. to Europe on ten seems to have fallen away—and will probably remain 'fringe" until next spring—but 28 Mc. is not quite as dead as it sometimes sounds; it suffers from lack of participants. During contest week-ends, it often carries a variety of prefixes. There is DX on 7 Mc., too, but the commercial QRM is very trying indeed.

Let's see who is active!!

NOTES AND NEWS

Barbados: 8P6AO, 14041 Kc. at 1104z. 8P6AF, 14225 Kc. at 0717z.

Ethiopia: ET3FMA, 14215 Kc. at 0255z. Also 3805. 1830z.

Gibraltar: ZB2AY, 14184 Kc. at 0200z.

Kure Is.: KH6EDY, 14212 Kc. at 0540z.

Kuwait: 9K2BV, 14110 Kc. at 2030z, using dipole there.

Mauritius: VQ8CS, 14212 Kc. at 1230z. QSL via VQ8AZ.

Mongolia: JT1AJ, 14195 Kc. at 1445z. JT2AB, 14040 Kc. at 1221z. JT1KAA, 14057 Kc. at 0250z. QSL via Box 639, Ulan Bator, Mongolia.

Mozambique: CR7FM, 14205 Kc. at 2245z. Fernando with excellent signal. CR7CO, 14204, 1318z. CR7IZ, 1005, 1930.

Niger Rep.: 5U7AN, 14230 Kc. at 2300z, Bill. QSL via W4WMF.

Reunion Is.: FR7ZG, 14215 Kc. at 1230z. FR-7ZL, 14205 Kc. at 1240z.

Rwanda: 9X5SP, 14205 Kc. at 0130z.

St. Helena: ZD7FF, 14199 Kc. at 2319z. QSL via W8UAS.

St. Vincents: VP2SY, 14200-14220 Kc. between 0040 and 0315z.

Senegal: 6W8DY, 14227 Kc. at 2253z, Jacl. USA/VE QSL via VE4SK; P.O. Box 1021, Dakar, for direct QSL.

Tristan da Cunha: ZD9BJ, 21325 Kc. at 2223z for extended periods 1800-2300z.

Turkey: W6TNS/TA very active 14200 Kc. about 1800z.

Vatican City: HV3SJ, 14217 2130. QSL to WB2ETI.

Tunisia: 3V8TA, 21152 1935.

Pakistan: AP2MR is active most week-ends, 14110 1630.

Virgin Is.: KV4AA active most days now, 14080 2245. QSL 16 Commandant Gade, Charolette Amelie, St. Thomas, 00801. Dick was QRT for quite a while.

Sweden: New prefixes for Swedish Club stations SK. Will be used from 22nd March. Fifteen already have been issued.

Sao Thome: CR5SP 21056 1630. QSL W2GHK.

Guadeloupe: FG7TE and FG7GE active 14040-50 2000.

Bear Is.: JW2BH QRV 14105 1500 week-ends.

Nauru: VK9RJ using 14 s.s.b. only at the moment, but hopes to be able to be on other bands soon. QSL K6UJW. (VK3AOM).

Cape Verde Is.: CR4BC and CR4BL 14222 2300 and 14253 0200. QSL P.O. 64, Praia.

Central Af. Rep.: TL8DL 14196 1900.

Cameroons: TJ1AJ ex-DJ3DW QRV 14 s.s.b. TJ1QQ 14195 and listens up 10. The latter asks his cards via W4DQS.

Cyprus: ZC4RB, 14210 1400z.

Faeroes: OY5NS, 14202 2000z.

Falkland Is.: VP8JR, 14005 2200z.

Franz Josef Land: UA1KED, 14053.

Gabon: TR8AC, 14195 2130z. Parlez francais, s'il vous plait!!!!

Nepal: 9N1MM, Father Moran, 14225 0130. QSL W3KVQ/2.

Ruanda: 9X5AA, 21300 at 2000z. QSL P.O. Box 28, Kigili, Ruanda.

Gambia: ZD3F, 21260 2215z. QSL W2CTN.

Gahrein: MP4BEU, 7005 1900z.

Spanish Guinea: EA0TU, 21008 1500z. 14032 1800z.

Sierra Leone: 9L1GR, 14203 2240.

Ascension Is.: ZD8NK, 14018 2030z.

Swaziland: ZD5X, Vic still on most mornings, 7005 1900z.

Malawi: 7Q7LZ, 28584 1800z.

Fr. Somaliland: FL8FP, 21 s.s.b., 2000z.

Galapagos: 14206 0430z. HC8JG.

Port. Timor: CR8AH, 21190, 21210, 1300z.

Saipan: KG6SM, 14220 1100z.

East Carolines: 14216, 1300z.

British Honduras: VP1LP, 14201 2400z. QSL 3C3ACD.

Monserrat: VP2MW, 14215 2300z. QSL P.O. Box 274.

Somali: 6O1BG, 14208 2100z. QSL American Embassy, Dept. State, Washington DC.

Greenland: OX4AA, 14232 0200z. QSL K8REG.

Palmer Arch.: KC4USP, 14226, 21235, 21005, at 1900z.

Trinidade: PY0BLR, 14195. QSL PY4BLR.

Fonseca: HR4SN, 14151 0300z.

Arctic: UA1KIP, 14006 1900. Looks for VK QSOs at this hour.

Spanish Morocco: EA9AQ 21290 1600; 28600 1700. QSL Clenent Herranz, B.I. Catilica 6, Mellica.

Iceland: 14210 2000. Also worked 14028 1935. QSL E. Daigree, Box 22, U.S. Naval Command Station, F.P.O. N.Y. 09571.

Iceland: JX6RL 14218 2100 for this Jan Mayen activity. QSL via Norwegian Embassy, Reyjavik.

Svalbard: JW5YG 14200 2200. QSL via Norwegian Bureau.

Ten Metres.—Audible and working VKs: CO5PP 420 1810z, CX4JK 050 1740z, EP3AM 030 1442z, HC5EJ 628 1412z, HI8XMT 578 1430z, PJ3CC 578 1450z, PK1AA 000 1310z, TG9XX 581 1925, TI2IA 590 1407z, VP1PV 600 1610z, VP9GB 510 1750z, XW8BS 580 0930z, ZD8J 033 1645z, ZP9AC 446 1940, ZS9L 633 1520z, 4U1ITU 580 1800z, 5H3KJ 039 1630z, 5U2AB 055 1007, 6Y5AR 016 1613z, 9G1KM 612 1602z, 9K2BV 580 1445z, 7Q1ZZ 580 1800z, XW8BP 030 0900z, VQ9B 020 1937z, ZS6J 020 0700z.

ACTIVITIES

Barry VK5BS has been listening on 160 mx but reports no DX audible to this date. Just to keep his hand in he logged these on 14 c.w.: VO1FB, 6Y5GS, G3VMO, UQ2KBC, DL8KO, XE1WB, JH1AB. Give Barry a call if you hear him on the top band.

Dud VK4MY still picking off a few new ones each month. Reports conditions as good. 14 s.s.b.: UW1KAT, EA3NI, UA1CX, KX6GJ, OX3EL, VK9RJ, 6W8DY, HK0BKW, UA4CZ, VP2MK (Monserrat), VE1DW, CR6GS, HK4AET, UP2NV, CE6EF, PA9FE, LX1BW, IT7GAI, PJ5MMH, HS3TM, FM7WO, EA8FJ, FG7TI/FS7, HL9KD, HL9US, SK2AZ, VE8RCS. All these mostly between 0700 and 1300. On A1 mode: VE7IQ, CT1OI, 9J2HZ, CO2BB, EA8FJ, PJ5MM. (Thanks Dud.—Al.)

Ken VK3TL says conditions to the Caribbean very f.b. indeed. 14 Mc. s.s.b.: CT2AP, FG7XE, FG7XX, HI8AM, HI8LC, IT7GAI, LX1AJ, PJ2AQ, PJ2CZ, PJ2MI, PJ3CC, PJ3CJ, PJ5MM, PA9FE, PZ1BF, SK5AJ, VO1DZ, VP7NH, VP2AM, VP2GBG, VP8JT, I9RB/SU, 6Y5CB, 8P6AF, 8P6AH, 8P6AZ, 8R1G. QSLs received: VQ9AA/C, 1G5A, FR7ZP, VQ9AA/A, VQ9AA/F, CE0K, YJ8BW, SL2ZI, ZS8H. (Magnificent list OM.—Al.)

Keith VK4DU not very active due to other commitments, but occasionally unleashes the full might of his 6 watts into a random length antenna. These QSOs resulted. 14 Mc. c.w.: SV1BZ, EA8FJ, YU1ABQ, ON4ZO, G6ZO, SM4ASJ, SM5CAE, SP8AG, OK1YD, UA0EW, JH1EUQ; 21 Mc.: W1ELB, HB9OU, and Ws on 10 metres. It is possible that Keith will be vacating his magnificent Gold Coast QTH and setting sail in his yacht on a South Sea Island cruise, calling at many exotic spots, Amateur-wise, and perhaps for a period of four or five years. (Good luck to you, old man—you will be taking Amateur gear, of course.)

One or two activity reports arrived late last month (delayed), so if your notes do not appear, you will understand.—Al.

Merv VK4DV, from the land of the "Wet", reports an insect plague which restricts his activities somewhat after dark. However, the following shows some real "goodies" worked. 14 s.s.b.: TU2BD, VP7DL, VE7ABS, VP2AA, 4A1FFC, YU1YG, 4S7PB, G3JAF, F5ID, OK1FV, I1ZFT, CR5SP, G3AO, VP8IE, 4A2IH, 4A3AF, CE3CZ/CE0H, F3EG, CR3DY. 15 mx: UA3HO, OH8NH, G6RC, SM7IA, DL2JQ, DJ1FC, UA-3KBO, GW3NNF, UP2NN, G3IUD, OH1OE.

Peter VK4PJ not very active but came up with the following: HA8CF 2050, VE2TI 1125, W2DR 1130, W2BCX 1150, G8UG 1100, 4Z4SO 2035, W2MHR 1155, G3ONQ 2040, F2MO 2045, ZS5FF 0730, ZS1DC 0745, 9H1M 2040, OK3ER 2030, G3TLJ 1225, DL2NO 0100, G2IC 0100, YU1KG 2030.

David VK3QV only on for part of the past few weeks, but "dug" out of 28 Mc. the following: DL4FS, HL9TG, KG6AAY, KH6FBQ, KH6GKI, KR6CL, KS6CQ, KW6EJ, OH2DP, UA3KBO, UA9CBW, UV9PP, UF6CR, VK8AU, VK9LR, VR1L, VU2DKZ, ZC4RB, ZL1AKK, ZS5FF, ZS5KI, 9U5BB, 9V1OM, XW8AX. (Nice work, OM.)

VK6IZ reports the following choice ones. 14 s.s.b.: PJ2CZ, F8VX, F8DR, FR7ZG, FR7ZS, 6W8DY, VR1L, 5W1AR, HS3TM, MP4TCE, VQ-9OH, CT1GD, ZL5AA, 7Z3AB, 3A2MJC. 21 Mc.: KM6BI, UA0CA, UI8KAD, 4U1ITU, UW3CS, UB5KLD, OY7ML. 28 Mc. c.w. and s.s.b.: XW8BP, CT1LN, ZC4RB, ZE1BS, ZS9Q, DM-3UMN, UL7AST.

Don VK3AKN produces a full page of prefixes worked on 28 Mc. Over 100 calls and nearly 50 countries. This gives the lie to those who say ten metres is dead. Here are a few at random: 9H1BC, SV0WY (Box 66 Rhodes), KR8DE, UF6DR, OH2BGD, DL5RC, ZE1WPC, ZS2GE, UA4RK, W1EVT, UA0SU, OZ5CV, UL7AST, PA0VO, YO2IS, OK2BJJ, 9J2VB, UO5PK, 9V1SJ, F8IH, UY5AL, SM4ARQ, 5R8CQ. VK7SM, ZL4BO, 5Z4SS, VE7HQ, VS6FX, G5RI, VQ8CC, UA1FBI, HM9BI, UA8AI, UC2CX, HB9APV, UH8AP, UD6BD, JH1BEK, UQ2KCS, HG2KRD, KL7PI and many more.

SOME QTHs

HK0BKW—P.O. Box 219, S. Andreas Is.
KX6GJ—P.O. Box 8515, A.P.O., S.F. 96555.
SK2AZ –SM2BHX.
FM7WO—WB2SSK.
HS3TM—K3LTV.
SV0WL—W2CTN.
VU2DIA—Says send his QSLs to this QTH: B. S. Hegde, I.S.P.W. Stn., Panjirn, Goa.
9U5BB—P.O. Box 14, Bujumbura, Burundi.
ET3REL—W5LEF.

Can anyone help David VK3QV with the QTH (the present one) of Roger MP4TBO?

SUMMARY

My thanks to LIDXA, G. Watts, Fla. DXer, Don Grantley L2022, "Air Waves," N.Z. DX Editor ZL2AFZ Geo. Studd for supplying most of the above DX items. Also on the home front to the ever-helpful gang of VKs who simply keep the column alive. 73, Al VK4SS.

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CONTEST CALENDAR

21st March/31st Dec.: Concurso Mexico 1968 (L.M.R.E.).

6th/7th July: New Zealand Memorial Contest, 3.5 Mc. only (N.Z.A.R.T.).

5th/6th October: VK/ZL/Oceania DX Contest, phone section (N.Z.A.R.T.).

12th/13th October: VK/ZL/Oceania DX Contest, c.w. section (N.Z.A.R.T.).

12th/13th October: 21/28 Mc. Phone Contest (R.S.G.B.).

26th/27th October: "CQ" W.W. DX Contest, phone section.

26th/27th October: 7 Mc. Phone Contest (R.S.G.B.).

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VHF

Sub-Editor: CYRIL MAUDE, VK3ZCK
2 Clarendon St., Avondale Heights, Vic., 3034

Well firstly I must apologise for the briefness of the notes this month, but owing to a rapid increase in cost of printing "A.R." and the reluctance of other Divisions to assist in meeting these costs, "A.R." will be greatly reduced in size until such time as more finance is available.

Generally conditions have been poor with only scattered DX activity. The most interesting news of late being the 146/438 Mc. translater unit that was raised by balloon to 102,000 feet and enabled Adelaide and Melbourne stations to work each other.

73, Cyril VK3ZCK.

WORKED ALL STATES AUSTRALIA AWARD

V.h.f. operators are reminded that new rules will apply to this award as from 1st July, 1968, and intending applicants should read carefully the new rules listed elsewhere in this issue.

No applications under the old rules will be accepted after 30th June, 1968.

—Geoff Wilson, VK3AMK, Awards Manager.

HUNTER BRANCH

144 Mc.: This band has been quiet, not much about, our only DX—Sydney—is even missing. The conditions on the whole have not been the best. Only Monday night is really active.

52 Mc.: There have been two openings during April—the 7th and 14th—both to VK5, and Bill VK2ZWM being the only lucky one at this end. During both openings, VK5s were working VK1s and VK2s down south. Generally conditions have been very poor with little activity. 73, Mac VK2ZMO.

VICTORIA

The April meeting of the V.h.f. Group was chaired for the first time by Gil VK3ZGS, who introduced the first speaker, Les VK3ZBJ, who gave a short talk on the Australis developments. He then showed the working unit. David Wardlaw followed with an interesting talk on tthe Intruder Watch in Australia. General business brought the announcement of the change of name of the "Converter Committee" to the "Projects Group". Over two hundred kits for the 6 metre converter were distributed throughout VK and ZL and with ideas for future kits, not essentially converters, a change of name and set up was thought to be needed.

Melbourne v.h.f. population was surprised when the call G3UJB was heard on 144.8 Mc. a.m. It was soon found out that Brian is a Maritime Mobile station on the ship "Hunting Don," which sails the Pacific. So if you hear him on give him a call and welcome him into the rag chew.

Alan VK2ZEO spent a short time during Easter in Melbourne and made his presence felt on 2 metres a.m. Now back in VK2, Alan listens on 2 every night for DX from Melbourne, so remember to give him a call.

Gavin VK3AEJ is now resident in Melbourne and active on 2 mx a.m. This will only be temporary as Gavin believes he will soon take out a VK4 call from Willis Island in the Pacific using h.f. and 6 metres s.s.b.

Col VK3FO, who lives in Maldon, would be grateful if a couple of the boys who have mobile 2 metre gear would make a trip to Maldon some week-end. The object is to try an experiment with the terrain in and around the district. If there are any "takers" for the trip they can get in touch with Col either by letter or phone on Maldon 75-2245.

73, Robert VK3ZPX.

Eastern Zone.—The Gippsland boys are slowly making more use of the 6 mx a.m. net frequency (53.032 Mc.). Active stations heard last month included VK3ZOZ Moe, VK3UG Warraful, VK3AOJ and VK3ZDP Sale. The following stations have been worked on this net: VK-3ZRG/3 Mt. Buller, VK3ZVK, VK3ZPK, VK-3ZYP/3, Mt. Dandenong, and VK3ZXP/3 mobile in Gippsland.

However, no interstate or overseas DX (in or out of band) has been logged or worked, even though George has spent many daylight hours listening. M.u.f. was peaking to 44 Mc. on March 26 and April 27.

The 2 mx f.m. nets have been very busy, especially during the Eastern Zone Convention week-end (April 20 and 21) at Mirboo North. VK3ANC was the control and talk-in station, working 20 mobiles using both the 6 and 2 mx nets. Les VK3ZBJ gave a very interesting and informative lecture, demonstrating solid state v.h.f./u.h.f. techniques, problems and the traps to watch out for. For competitions, we had 6 and 2 mx scrambles and a 2 mx hidden tx hunt.

A keen interest is being shown with the Australis "Highball" series of experiments. Firstly, using the experimental Ch. B1 translater, and secondly, VK3ZCG Morwell was heard and was hearing with difficulty VK3 Melbourne, Geelong and VK5 Adelaide stations via the Australis balloon 146/432 Mc. translater over Mildura. Signals faded out in Gippsland at 0825 hours (28th March). The zone looks forward to the next test in the series. 73, George VK3ZCG.

— . . . —

Correspondence

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the Publishers.

"A.R." MAGAZINE

Editor "A.R.," Dear Sir,

I was amazed to hear on the VK3WI broadcast of the possible ending of the publishing of "A.R." I quite realise that it must be maintained as a commercial proposition and kept within a budget. However I feel, and it is the opinion of many Amateurs with whom I have spoken during the last week, both on and off the air, that the loss of "A.R." would have very drastic and far reaching results.

Apart from the very obvious lack of news and information which would occur, all those with whom I have discussed the matter feel that many W.I.A. members, especially those in the country will take the attitude that there is very little point in remaining members of the W.I.A. if they don't even get a magazine for their yearly sub.

As the number of members is only about half the number of those with A.O.C.P. or A.O.L.C.P. we feel that this could weaken the W.I.A. to a point where the whole structure would be weakened by smaller membership. This we simply cannot afford and especially at this stage when the number of Amateurs is on the increase and new operators need to be kept informed of the W.I.A. and its activities. The potential for growth is there if only it can be directed in the right manner. Also, if the present very efficient set-up for "A.R." was to break up it would be very hard to get things moving again at a latter date and the valuable experience of the past would be lost.

Even if some other W.I.A. funds had to be diverted to maintain "A.R." until such time as it could hold its own or a price rise be agreed to, I feel that the importance of "A.R." is such that it must be kept at any cost. It is rather a strange thing to think Amateurs will think nothing nowadays of spending $700 on a transceiver, perhaps $200 on an aerial, $200 on a tower, $200 on a rotator, etc., etc., BUT are not prepared to pay a few extra cents towards their own magazine. If "QST" or "CQ" etc., push their price up 20 or 25 cents you don't hear any complaints from the locals, yet by comparison the value of the material in "A.R." is far greater to the local operator than the overseas magazine, as apart from the technical articles there is little of interest to people outside the U.S.A. The ads. are of local interest only as are the endless pages of notes on traffic handling, etc. Any DX info., etc., is usually 4-6 months old and meaningless by the time the magazines get out here. Do the people who are so against "A.R." realise this when they start comparing the overseas mag. value against "A.R."?—I think not.

Well, that's how I feel about the matter, and I know that there are lots of others who are thinking along similar lines. Whether they will make their thoughts known or not I don't know.

—Geoff Wilson, VK3AMK.

EXCELLENT OPPORTUNITIES

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(Vacancies in all States)

Salary: $98.88 per fortnight. In addition, minimum shift allowances (excluding overtime) average $24 per fortnight.

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SWL

Sub-Editor: D. GRANTLEY, WIA-L2022
P.O. Box 222, Penrith, N.S.W., 2750

Those remarks of mine under the heading of "Comment" in the April issue have brought forth many letters from our out of town listeners who, in the majority, agree with my comments. On the subject, I have nothing more to say, but we would like some suggestions as to what can be done for the S.w.l., or should I say what the listeners can do for themselves. If any listener, particularly from an isolated area has any suggestions as to how the S.w.l's lot could be improved, then I would like to hear from them.

The mailbag this month has been very large and most helpful, and without further ado, we shall cross over to VK6 and say hello to George Allen, who comes in this month once again per medium of tape and letter. George has been on a trip to the Eastern States and has returned home after a fine visit, which included much time with his and our good friend, Eric Trebilcock. A very interesting log extract from his loggings on 1.8 Mc. is of exceptional interest, but keep in mind that George does operate from W.A. and is in a far better position to hear this DX. The following calls were heard on top band, all using c.w.: GM3FSY, G3UNT, KA9MF, W0GDH, W0GCL, KA9AK, JA4IO, W9PNE, W6ITY, W6RW, W6GEN, W7SFA, JA2CLI, JA3AA, JA1CJQ, W6EWN, K9YWO, W9CZT, VK9GN, W0VXO/0, VK3APN, VK3GU, VK3TB, W8GDQ, G3MYI and G3RXH. Times varied from 2100 to 1200 G.M.T. and RST from 229 to 569.

Over to VK5 where Ernie Luff has scored some more QSLs, namely 3C4ZX, GC2FMV, G3IFB, G6XM, G6VQ, G2RO, OE1HJ, VE3CYL, OA4JR, 3C2WY, G3PRJ, G6RC, VK6CW, VK-6KK, WB6BFK, 6Y5BG and SM6BSW. His score is 239 heard, 174 confirmed in 38 zones with 42 States.

An old friend of mine in Ron Hanel, of Wodonga, L3309, has been very busy on the 20 mx band, using an EIL HCR-62 plus a ZL mini-quad and multiple dipole. With this gear he has logged 128 countries, with 56 confirmed in 25 zones, and if the list of countries heard of late is anything to go by, we will be hearing a lot of Ron in the days to come. Some loggings are: UP2NV, EP3AM, UG6AW, CR5SP, GC2FMV, CT1AW, FO8BY, 9V1CN, ET3USA, VR1L, KJ6BZ, HR1KAS, TA1AH, VP7NH, HK-0BKW, VP9EP, OD5FO, TG9GF, KG4AN, YJ8BW, PY1CK and UA0IM to name a few.

Thanks to Jack Clayson, L5015, of Tantanoola, Al VK4SS, Ray Moseley, Bernard Hughes and others who have either written in or taped with news. By the way, chaps, if you hear anything out of the way in DX, particularly from Oceania, Al VK4SS, our DX Editor, would like to hear from you prior to the end of the month.

Recent prefixes heard by Steve L5088 include KS6, OX3, 9Q5, GM3, VP7, CR7, 9K2, FM7, JT1, UC2, 5W1, ZB2, PZ1, HB0, YK1AA, EP2, OY7 and EA8. Maurie Batt, of Rokewood Junction, Vic., made his first log entry in Oct. '66, and has now logged 200 countries in 40 zones, with 47 confirmed. This, too, is very good going and we look forward to hearing much more from central Victoria.

Mac Hilliard over in Campsie has been busy with the receiver and was fortunate to log two new countries, OY and EA8, in the one QSO, taking him to 253 heard. Mac was able to visit the Eastern Conference in Sydney and had the pleasure of meeting many old friends from VK3 and the overseas delegates.

Much the same report could be given from this QTH, plenty of good and interesting DX to be heard on 20, at all hours of the day, in fact my last log entry showed a QSO between TG9EP and LX2FB, not newies unfortunately. Scores here 307 heard, 178 confirmed.

The first batch of cards from the W.P.E. Bureau have arrived here from Roy Waite, and where possible have been mailed direct to the listeners concerned. This procedure will be adopted for all cards which are received here for other listeners, there is no need to forward a s.a.s.e. Cards are held here for L2230, whose QTH I do not have. As I have no up to date list of S.w.l's in the various Divisions, if you are not in the '66/67 issue of the Call Book, and have the possibility of receiving cards from overseas, particularly via N.N.R.C., P.E. or I.S.W.L., would you give me your name and QTH so that I may forward any cards on. This applies regardless of whether you are an Institute member or not. One of the well known I.S.W.L. S.w.l's in Peter Thackeray, G11387, is migrating to VK2 and leaves G land in May.

DX NEWS

The following have been heard frequently of late: I9RB/4U, ZD5V (all bands incl. c.w.), VK9XI, VK9RJ, ZL5AA (who QSLs via Jock ZL2GX, but please make your reports good ones and cover a number of contacts), TA1AV, MP4DAT (Das Is., QSL G3USK), PX1CW (Box 86, Zaragozas), LA0AD operated by Bob Schneider, DU1DBT 14105 s.s.b. 4A4A was due to appear during mid April for six days from Socorro Is., using eight operators, c.w. and s.s.b. SK7s AA, AL and AX are reported to be on, QSL DX Club, Box 24, Vaggeryd. Last, but not least, 7Z3AB will QSL via W4HEG, and GW3BOC, who is regularly heard here, is Mr. H. Synge, Plas Draw, Ruthin, Denbighshire, Wales.

VICTORIAN DIVISIONAL NEWS

The first few meetings of the VK3 Group has shown a steady drop in attendances and we are down to around 15 members per meeting. What has happened to the other 300 members? We now have 375 persons issued with S.w.l. numbers in Victoria (but only 250 Associates.—Ed.) and the Group would be delighted to see some of the members of previous years. The Group wishes to thank the members who are regularly supporting band reports, etc., for the Sunday morning broadcasts from VK3WI, anyone wishing to submit reports should contact Harry Roach, 28 Foster Ave., Glenhuntly. Thanks to Ian Woodman for the foregoing.

OVERSEAS CLUBS

We are always interested to hear of Amateur Radio being of assistance or comfort to those in need, and in view of this, I would like to pass on to you a short run-down on the Radio Amateur Invalid and Bedfast Club. It will be readily understood what a valuable hobby Amateur Radio is for invalids, disabled persons and the blind. It is one sphere in which these fellows can compete equally with others, no distinctions or concessions are made or asked for.

It was to encourage this, and to help each other, that this club was formed 11 years ago by a handful of invalids, and the membership has now grown to over 400, with a further 200 supporters and representatives who visit the members in their area to keep equipment in order and to assist in any way necessary.

A monthly news-letter is circulated and there are twice weekly get-togethers on Amateur frequencies to exchange news and give pleasure to the S.w.l's in the club. The club also assists those wishing to obtain their tickets by supplying text books, and the use of recorded lessons and braille information. All this work is done by invalids themselves as is the recording of Morse on tape and the reading of the newsletter for blind members. Braille transcribing for the club is done by prisoners at two of H.M. prisons as a voluntary work.

As illness knows no barrier, the club therefore is class-less, and non-denominational, funds being raised by voluntary subscription. There are members in every continent and in many countries, and the exchange of letters and tapes does much to increase the family atmosphere which is so important for those cut off from the outside world.

Several homes of the Cheshire foundation for the Relief of Suffering have Amateur Stations and belong to the R.A.I.B.C. with their own weekly get-together, and it is the hope of Group Capt. Cheshire that in time, all the homes will be linked by Amateur Radio. Club stations are flourishing at Orthopaedic Hospitals and Schools for the disabled. On the supporting side, various schools with radio clubs take a great interest and are ready to help wherever possible.

QSL CARDS

Quite often I get a query in the mail from a newcomer to the S.w.l. ranks, who is at a loss when it comes to the designing and printing of their own QSL cards. Design of the card is most important. It is necessary to have the call sign of the station heard in a very prominent position to assist the QSL Bureau, and other considerations are to have as much data printed on the card and have adequate provision for all the necessary information of the QSO being reported. Of course, if you attach a report sheet, or send the card direct to the station concerned, you can write as much as you want, but my remarks are directed to those who will be using the Bureau.

The days when a fancy and expensive card would extract a QSL are over and these days a station either QSLs a S.w.l. report or he does not, thus the elaborate card is quite unnecessary. A plain black and white card on the lightest possible board, provided it is well designed, is adequate. The proven "log extract" type of layout is ideal, with printed details of gear, QTH, etc., if possible, with a clear impression of your club identification and affiliation, and most important, cut to size to fit a standard envelope, will do just as good a job for you as will the glossy effort which costs you a packet.

Recently the Elizabeth Amateur Radio Club, of which I am proud to be a member, had a large number printed and made them available to members at a very reasonable cost. Printed on good quality card, and well laid out, it caters for Amateur and S.w.l. alike, and I feel that it is well up to standard. One suggestion though, for S.w.l's using this card, fill in the name of the station being reported in a different color to the rest of the report. It assists our overworked QSL managers to sort them out. Also I pass on a request from the VK2 QSL manager, Ted Whiting, who asks that where possible, if you know a station's QSL manager, write his call on the back of the card.

Costs of cards vary, the first ones I had printed cost me about the equivalent of fourteen dollars for two thousand. The E.A.R.C. cards compared favourably to this figure, but of course had to be overprinted (I use a rubber stamp). Recently I had a quote for a reprinting of my original card and for 2,000 of the same quality I finally got a similar quote. The more you have printed, the less they cost, and 2,000 I find is a handy sized order. Don't write and ask me to recommend a printer because I can't do this, however there are plenty of them, even possibly in your own town, whose quote will compare more than favourably with anything you can bring in from the States.

That winds it up for now. Thanks to the many who have written and whose letters have not been acknowledged through this column, and for a final final, those comments in the VK5 column of the April issue of "A.R." were entirely the property of the gentlemen concerned, I didn't have a finger in the pie at all. 73, Don L2022.

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Publications Committee Reports

The committee met on 6th May and received correspondence from VKs 1VK, 3AMK, 4AT and 4LW. Technical articles have been received from VKs 2ZIF, 2AOU, 3WW and 5PS, and the DX Editor VK4SS. Al has indicated he is going on a much-needed vacation and will be unable to submit any DX notes for the July issue. He also indicated that he would like to be relieved of his task and asks if anybody would be prepared to continue his column. He indicated early this year that his health was far from good and he did not think he would be able to continue much longer. We ask anybody prepared to carry on the burden to write to us at P.O. Box 36, East Melbourne, 3002.

Some discussion was held on the subject of the poor standard of some of the notes we received during the last two months, but in view of the fact that notes will be discontinued with this issue, no immediate action need be taken. It was decided, if and when notes are resumed, we will once again publish the correct method of preparing the notes and only accept those which conform.

A review of technical articles on hand was made and it was agreed that in view of "A.R." being financially embarrassed, the cost of blocks was going to be a problem and we should if needs be, restrict ourselves to 20-page issues.

It was agreed that every effort should be made to keep "A.R." afloat, but that the Victorian Division should not be expected to carry the loss. The additional 2 cents per copy voted for at the Federal Convention was considered unrealistic, and it was agreed that Federal Executive be asked to conduct a postal ballot of the Divisions asking for the 5 cents originally sought by the committee.

ANNUAL QUEENSLAND
STATE CONVENTION
will be held at
ALEXANDRA HEADLANDS
(70 miles North of Brisbane)
over the week-end of
14th, 15th, 16th JUNE, 1968
Competitions will be held for HF, VHF, A.O.C.P. class members, Y.R.S. members and the XYLs.

FEDERAL AND DIVISIONAL MONTHLY NEWS REPORTS

(SEND CORRESPONDENCE DIRECT TO DIVISIONAL REPORTER NAMED AT END OF PARAGRAPH)

FEDERAL QSL BUREAU

The annual Independence of Columbia Contest is scheduled for 0001z, July 20, to 2359z, July 21. All bands, 80 to 10 metres, and all modes, but no cross modes. A limited supply of details and log forms is available from this Bureau.

The L.R.E.M. (Mozambique) has made available a new award known as "Mozambique," and also the W-CR7-A Certificate. Details of both from this Bureau.

The N.R.R.L. (Norway) draws attention to its Norwegian Award 1968, which celebrates the 40th year of the foundation of the N.R.R.L. Full information from the Federal Bureau.

QSLs for the operation of VK4HG from Willis Island in 1967 have been issued either direct or via the Bureaux.

A further supply of information slips on the Budapest Award have come to hand and are available on application.

Cards through this Bureau totalled 6,000 for April. While this 50 per cent. reduction is appreciated, the envisaged reduction to 25 per cent. has not been attained, mainly due to the reluctance (or obstinancy) of the UA Bureau to conform to the arrangements. A despatch received in April from Moscow consisted of 17 packages totalling 23 lbs. weight and contained 3,000 QSLs!! Three air mail advices of the new arrangements have been ignored. In a further attempt to bring them into line, a fresh copy of the arrangements, written in their own language has been sent to the President of the Radio Sports Club, Moscow. The translation was composed by Alan Elliott, VK3AL.

Am still awaiting information on the disposal of QSLs for VK9RJ, ex New Guinea and now at Nauru. Any dope will be appreciated as the pile is steadily mounting.

Ray Jones, VK3RJ, Manager.

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NEW SOUTH WALES

COUNCIL NEWS

At the time these notes were written the main topic of news is the I.A.R.U. and Federal Conventions, which by being held in Sydney, consumed all available Council effort. The N.S.W. Bulletin is being held up so as to contain a preliminary report of these events and to include the Annual Report and Balance Sheet for the Division's last financial year.

The auditor's report of the Division's finances shows an increase from just over $9,000 to $11,320 in totals since last year and a loss of $1,650 overall. While the loss quoted appears excessive, some $500 covers written off furniture, $890 depreciation, and costs of repairs and renovations of $1,536.

A visit to W.I.C. Atheson St. will soon show that the money expended has been put to good use, the building both externally and internally has been improved considerably, both for members and visitors to the new store. If you have not been to W.I.C. since the New Year, then how about coming to a meeting? By the way, if you read this column and you have not yet renewed your subscription, then this may be your last "A.R." until you do renew. The sub. is cheaper than anything else you buy . . . and it has an assured life of 12 months!

Senior Vice-President of the Division, Peter 2AXJ, has advised of his resignation from Council due to ill health. Peter has rendered considerable service to the Division both as Councillor and W.I.C.E.N. President-Chairman. However, Peter will continue to carry the important position of President of W.I.C.E.N., it being hoped that the lessening of the burden will help him to recover his health. Your correspondent is to some extent amazed at the small number of office-bearers carrying the 1,500 odd members of this Division, many holding two or more positions as did Peter. Maybe the time is approaching when a member can hold only one office position at once.

After some nine months as Secretary of the Division, Mrs. Long ceased duties in early May. Mrs. Long was of tremendous assistance to Council in re-organisation of the office services of the Division and the thanks of all are due for her untiring efforts for tasks involved. The position of Secretary has been taken up by Miss R. Fletcher.

MONTHLY MEETING

On Friday, 26th April, the April monthly meeting was held at Wireless Institute Centre, Atcheson St. The President, Keith 2KJ, was absent due to business commitments and the Senior Vice-President was also absent so the meeting was opened by Councillor Don 2GN. The minutes of the previous monthly meeting were read and accepted. The customary list of new applications for membership was presented to those present for acceptance and were duly passed and welcomed to membership of the Institute.

Don then advised the meeting that due to the absence of the President and the lateness of the arrival of the Bulletin, which contains the auditor's report, the adjourned Annual General Meeting would again be adjourned until the following general meeting in May. Don then introduced the lecturer, Mr. Nicols, Director of Forward Planning of S.T.C., who then gave a very interesting lecture on telecom. systems needed to meet the requirements of the Mt. Newman iron ore operation in W.A. Colour slides of the ore handling operations at Hammersley were shown.

The magnitude of the project was quite impressive and the lecture was enjoyed by all. A vote of thanks was moved by Bill 2YB and passed by acclamation.

Following the lecture, a report of the Conventions was presented to the meeting by Pierce 2APQ who endeavoured to cover the various aspects of the Conventions in some detail. From the topic of the Conventions, the meeting then discussed a number of matters finally being closed for the usual cuppa and ragchew.

W.I.C.E.N. NEWS

During April the annual meeting of the Group was held and the election of officers for 1968 took place. The result of the election is as follows: President-Chairman, Peter 2AXJ. Secretary-State Co-ordinator, Vic 2VL. Committee: Brian 2ZQX, Ian 2ZIM, Ken 2ANT, and Dave 2ZZD.

Activity during April was centred on Atcheson St., with a visit to Newcastle by Peter 2AXJ to lecture to the Hunter Branch at their May meeting on W.I.C.E.N. The Branch has a considerable number of mobiles and it is believed that a link with Sydney net is being established this year.

BLUE MOUNTAINS BRANCH

At their recent meeting the Branch held the election of office-bearers for 1968, the results of these elections were: Chairman, Bill 2HZ; Vice-Chairman, Alex 2EX; Secretary/Publicity, Danny Clift; Treasurer, Alf 2ZMW; Catering, Peter Eichauer; Construction Committee: Bob 2ASZ, 2ZGW, E. Broderick, and Peter Eichauer.

The Branch meets on the third Friday at Springwood. Details of the meetings are published in the Bulletin.

JAMBOREE-ON-THE-AIR 1968

The Australian Boy Scouts' Association will be holding the 11th Jamboree-on-the-Air on 19th and 20th October this year. If you would like to participate in this event contact Asst. Branch H.Q. Commissioner for Training, Mr. R. V. Lawrence, C/o. Branch Headquarters, Baden Powell House, 265 George St., Sydney.

Your assistance in this event could lead to some Scout or Guide taking up Amateur Radio and even making a career of the hobby. Another Amateur and W.I.A. member added to the ranks won't take up too much space.

73, Stan 2ZRD.

HUNTER BRANCH

At the meeting held on 3rd May, a good gathering of members was present to hear an interesting lecture on emergency procedure, given by Peter 2AXJ who had travelled from Sydney for the occasion. A great deal of discussion ensued and many views were expressed. However, it was agreed that the v.h.f. f.m. has meant the introduction of more activity for quite a few members. Even though most of those on this band seem to be equipped with crystals (germanium diode type) in the receiver, it may come some day that they do tune the front end to hear the signals from the few with good gear. (That, by the way, should cause a stir!) And while on the subject of v.h.f. operation, mention must be made of the return of the wanderer, John 2ZBD, or baby doll as one Marine View Villain put it. Not only did John return but he brought with him a brand new XYL, Vivienne, to share the joys of Amateur Radio. I am told that no lessons in theory of radio are being given lest there be the need for duplication of equipment, but this could all be a wicked fable.

And, since we did say something about new XYLs it is my great pleasure to thank all those who were concerned with the beautiful gift given to the 2AKX's at the last meeting. With almost military secrecy the task was accomplished and the most surprised member of the audience was the person who was supposed to be most surprised. I certainly never expected such an honour to be bestowed upon us and words are inadequate to express my gratitude for the thought. Thanks chaps from me, and Arigato gozaimasu from Kayoko.

Members had known for some time of the departure of Past President, Stuart 2AYF, for the wilds of Wollongong, Port Kembla, or whatever, but the action of the Branch in giving him an inscribed microphone as a memento of the time spent with us was a very fitting one. Stuart is to become an even more important man with his company, John Lysaght, and the general manager's chair will be his in the southern city. We wish you all the best Stuart, and now that you will have a bit more time for the hobby, let's hear you on the air—often. The presentation of the departure gift was ably carried out by Lionel 2CS.

For some, membership fees of the Institute are easy to pay, for others difficult. For this reason, the Branch decided at the last meeting to subsidise the initial membership fees of our new junior licensees as from the meeting date. Those benefiting by this move are Ian Miller, a fifth form student at Newcastle Technical High School, and Greg Cross, a sixth former from Whitebridge High. Both young men have just won the coveted A.O.L.C.P. and this as a result of membership of the Westlakes Radio Club. Congratulations are due to these chaps who have shown again that it can be done. And, of course, the score at the Club grows by the day, or exam. if you like, it now having the largest number of school student passes in the Commonwealth. Another two who were also successful at the last quiz were Les Payne, another Westlakes Club member, and Neville Threlfo. It goes without saying that all are awaiting the issue of the call sign, perhaps most of all Neville, our hard working broadcast co-ordinator, who wishes his appearance on the broadcast with the call to be the first news of its issue. Well done all, and welcome to the ranks.

One who has been in the ranks for quite a long time now but who never loses his interest in Amateur Radio is Bill 2XT. In the recent I.A.R.C. Propagation Research Contest he made the almost unbelievable score of 90 thousand plus with over 700 contacts for the month. Surely this tally must win him a pennant or plaque from Geneva. All on sideband of course.

Whether by chance or design, many members are now thinking about s.s.b. gear and reckoning that it may be the answer to at least some problems of communication. The Westlakes Club is the latest to take the plunge and, by the time you read this, you may have heard them on the air with a duck talker. It was made possible by the generosity of the members and many Hunter Branch members as well. Thanks chaps for your great interest.

And while on interest, how about the next interesting Branch meeting on Friday, 7th June, or 5th July, if you miss that one. The usual venue will be used, Room 6 in the Clegg Building at the Tech. at 8 p.m. See you? 73, 2AKX.

SILENT KEY

It is with deep regret that we record the passing of the following Amateurs:

VK5LF—Len Sawford.
VK6BA—Bill Moore.

VICTORIA

EASTERN ZONE

The Eastern Zone held their annual convention over the week-end, 20th and 21st April, at the Gippsland Educational Tours Hostel, near Mirboo North, and this convention turned out to be one of the best conventions we have had for several years, with a different format having technical sessions included. Attendance was excellent, having 70 sitting down for the dinner, after which David 3QV gave an excellent discussion on the history of quartz crystals, their limitations, and modern uses, demonstrating frequency shift with circuitry and overdriving.

The annual general meeting followed, the outgoing President, George 3ZCG, handed out a written detailed President's report and gave a brief verbal report. New office-bearers then were appointed as follows: Stan 3ZPL, President; David 3ZOZ, Vice-President; Graham 3QZ, Zone Co-ordinator and Organiser; Lee De Vries, Secretary; Zone call-back stations, 3AWV and 3DY; Zone correspondents, Rod 3UG and George 3ZCG (phone 4-3953).

The convention portable station, 3ANC/3, provided talk-in facilities. During the meeting many points were discussed, also Graham 3QZ spoke on W.I.C.E.N. and the Zone DX award certificate, which should be printed by our award committee shortly. During the meeting the ladies enjoyed a pottery demonstration by Dennis Dwyer, one of our foremost potters. After supper, a survival W.I.C.E.N. disaster film was screened. 30 members and their families stayed overnight at the convention site.

We also had a very good roll up for the Sunday events, starting after breakfast, whilst the women and children visited the pet animals, rabbits, monkey and kangaroo, etc., and went for nearby walks, finding some mushrooms. The men collected technical literature and visited the trade display, represented by Pye Pty. Ltd., Bail Electronics, and Dalmar Electronics. The first lecture was given by Fred 3YS about s.s.b. equipment and accessories, followed by Les 3ZBJ who spoke for quite some time on v.h.f. and u.h.f. solid state Amateur circuitry with practical sub-chassis and units on display.

After the midday dinner, the field competitions took place, which included children's events, 6 and 2 mx scrambles and a 2 mx hidden transmitter hunt won by Trevor 3ZGA. After afternoon tea, the "prize giving" took place, some excellent prizes being donated by the trade. This year's winner of our new "David Scott Award" was Rodney 3UG (ex VK0CR).

Everyone had such a good time and excellent meals, etc., the members decided to hold our next convention same date (approx.), same place, next year. On the way home, some of the members visited Reg Dyke's Mirboo North Disposals. Please pass all news on to either myself or Rodney. 73, George 3ZCG.

GEELONG AMATEUR RADIO-T.V. CLUB

Office-bearers elected at the annual general meeting of the Club were: President, Ian 3ZIB; Vice-President, Mike 3ASQ; Secretary, Bob 3IC; Treasurer, Russ 3ZUC; Librarian, John McKeown; Equipment Officer, Graeme Pattie.

With visits to radio stations, etc., fox and transmitter hunts, field days and portable operations, the new year should be a very active one. Theory classes for both novice and advanced students will be held. The Club is to have a stand at the Geelong Trade Fair and Motor Show being held in July.

The last week-end in April saw an invasion of the Latrobe Valley by Club members who inspected the Traralgon studio of GLV10, the radio section, power stations and open-cut coal mines of the S.E.C. V.h.f. radio contact was made with local Amateurs on both days.

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QUEENSLAND

The big event in June is of course the Alexandra Headlands Convention. Just about all of South Queensland's Amateur fraternity will be attending. For those in VK2 who, perhaps, would like to attend (or for those who don't read their "QTC"), the Convention is being held over the week-end of 14th, 15th and 16th June. Again this year, the Bundaberg Amateur Radio Club will be organising. Those who remember last year's successful Convention will be along again this year to enjoy the surfing, eyeball QSOs and popular contests.

At this time, this Division is in perhaps the strongest position it has ever been in. This is due to the good work being done by Council and to the fine support of members. For the first time, our part-time Assistant Secretary is being paid a small honorarium. As members will have already noticed, this has meant efficient and speedy handling of all business conducted through Box 638J.

In line with the progressive policy of Council, the disposals business has been expanded. While some miscellaneous items have been offered, they have cleared well. Such items as alarm bells and electric clocks have to be purchased by the disposals officer in order to obtain electronic equipment in the same sale. Perhaps not unexpectedly, some members have shown keen interest in these odd items. The tangible result of this has been the transfer of a sum of $500 from the disposals account into the general building fund. Members will remember that the last major item purchased with excess funds from the disposals account was the Galaxy V. for VK4WI.

Those who listened to the Sunday morning news broadcasts from 4WI during April and May will have noted the absence of the familiar voice of Vince 4VJ. A bout of illness forced Vince to enter hospital. Temporary arrangements were made to have Harold 4HB conduct the broadcasts. While the 20 mx transmission had to be made using a.m. (5PS to note!), country members were still able to copy this transmission quite well. Stations heard in the 20 mx call-back recently have included VKs 4OW, 4LB, 4VX, 9WD, 4QW, 4BQ, 4LZ and 4LO.

The big event for next month is, of course, the Sunshine State Contest. This will be held on the week-end nearest to the 20th July as a tribute to Jack Files. More details next month.

—VK4 Division.

CENTRAL QUEENSLAND BRANCH

Our regular monthly meeting was held on 15th April with a good attendance of members present. Main business centred around the projected trip to Tannum Sands—details are mentioned later—and the advice that the printing of the QSL cards was now under way, with distribution to members being effected in the near future.

On the week-end, 20-21st April last, Amateurs from Rockhampton, Biloela and Wide Bay areas converged on Tannum Sands for the "Get Together". As predicted, it was an outstanding success—17 Amateurs were present, and with associated XYLs, harmonics and visitors, a total of 78 persons enjoyed a most interesting and pleasant week-end. It should be mentioned that Jimmy 4HZ and XYL made a special trip from Gympie to renew acquaintance with old friends.

Several valuable items were donated by commercial and private sources for competition prizes in fox hunts, etc.; incidentally, one hears that some enthusiastic "foxes" employed camouflage reminiscent of wartime, to elude the "hunters". One of the highlights of the week-end proved to be the screening of interesting travelogue colour slides made available by several of the Amateurs present. In retrospect, the "get-together" was highly successful, and the general consensus of opinion indicated that these events should be held twice each year in future—the personal contact between families, from different areas, serves to strengthen friendships already made by radio.

On the h.f. band, the return of Hal 4DO from holidays has been evident—daily DX contacts are once more in full swing, and the word is that his latest stock of QSL cards will only suffice for a short time! Geoff 4FK still frequents the h.f. area, but seems to spend most air-time on 6 mx. Incidentally, 4FK has installed the 6 mx mobile gear into the new chariot, complete with remote control system—works f.b. to boot, you might say!

During this April, the Rocky v.h.f. gang were very active in the DX sphere; with almost daily openings into JA area, the pages of the log books have been rapidly filling with a wealth of JA call signs—there seems to be almost no end to the number and variety of JA Amateurs calling "CQ VK". The ever consistent group, Lance 4ZAZ, Bob 4NG, Frank 4ZFR, Doug 4ZDK, Gordon 4ZGA and Lydnsay 4ZIM, have kept the Rockhampton area name well to the forefront on JA-land. Reliable reports have it that certain QSO tallies are well up in the multiple hundreds for the present 1968 JA season, so far! However, at time of writing these notes, the band openings seem to be decreasing, and perhaps one may be pardoned for paraphasing somewhat diffidently "In the main, JA name calls plainly on the wane" (shades of My Fair Lady!!).

From Biloela we hear that Dave 4ZDR is back again in that area—looks like Don 4ZFB will have some competition in the DX field now! The espionage service reported that these two gents had a good time at the Tannum Sands affair!

By the time these notes are published, several local Z call aspirants for full licences will have braved the c.w. hurdle—we hope that the result will be successful for all; and the thanks of the group are extended to Geoff 4FK who does yeoman service in providing regular Morse sessions. His meticulous Morse is particularly good copy practice.

Mention must be made of the visitor, John 4ZJT, from Pialba, who made short-stay trip to Rocky to meet the local gang. A smart shack-crawl under guidance of 4FK and an eye-ball QSO with members at the monthly meeting, enabled John to make many new friends in quick time.

We understand Frank 4FN will be back again in local area very soon. We miss his lively presence at the meeting, that's for sure; also, we must record that our Secretary, Charlie 4ZBG, has to face up to a return to the "salt mine", after three or four months' long service leave! Things are tough, Charles!

Now the scribe is QRU—just let me close with the usual invitation to all visiting VK Amateurs, please contact us if you visit Rockhampton. You will be made welcome. 73, Lydnsay 4ZIM.

BUNDABERG AMATEUR RADIO CLUB

The monthly meeting was held on 1st May, at the club rooms in Avoca Street. A good roll up of members was present. The item of interest for the night was a discussion on FETs.

The main item of news this month is, of course, the very successful camping week-end held at Tannum Sands on April 20-21, together with the Central Queensland Branch and the Biloela Club. The roll up far exceeded our expectations and the Club members really enjoy the company of the Rocky and Biloela boys. I'll leave the write-up of this camping week-end to my CQ counterpart, Lyndsay.

At our April meeting we welcomed John 4ZJT. John lives at Pialba, about 80 miles from Bundy. He had worked many JA stations but no VKs. We soon fixed the situation by all turning our beams to the south and John worked five Club stations in the first four hours.

Roy 4ZWR and John 4ZJT claim the record for the longest 6 mx QSO in the Club of 5 hours 4 minutes with the complete time devoted to technical discussion.

The A.O.C.P. classes are progressing well in the capable hands of Roy 4ZWR. Roy runs two classes a week with eight class members. The Y.R.C. classes are very popular every Saturday morning with 16 elementary and eight junior lads. Peter Fry and Ray Evans are in charge of these Y.R.S. classes.

During last month, we had the pleasure of gaining a new Club member in the person of John Meyer from Mundubbera. We haven't had a eyeball QSO with John yet, as he lives about 150 miles away, but we look forward to doing so. 73, Rusty 4JM.

IPSWICH AND DISTRICT RADIO CLUB

According to my calendar the necessary number of days have passed to make a month so once again we have news time, and as usual the brain is wracked to remember what happened during the month.

The main adventure of the Easter holidays was a trip made by 8 club members, XYLs and harmonics to Auburn, some 70 miles north of Chinchilla and the holiday in the country was enjoyed by all. Some nearby caves were visited and these caves contained some old Aboriginal paintings which made the visit more interesting. Contact with the holiday gang was maintained on 40 mx by Dave 4HW, and Ron 4RG kept his end up with the 40 mx 6w. mobile. Other members travelled to VK2 for a short stay in Casino, but no gear was taken.

A film evening was held the other Saturday evening, the films being supplied by the JA Consul in VK4, and were most entertaining. All present hope that more films of the same calibre will be available for screening again in the near future.

A very interesting piece of v.h.f. gear was shown at the meeting by Roy 4ZRM. It was a 2 mx converter built around three FETs and the size of the unit was impressive. We hope we can get Roy to give us a burst on its construction and other interesting points. It is possible that members may scrap their valve models and construct this unit as it uses a minimum number of components and cost-wise it should run out cheaper than the valve models. With a bit of luck we might be able to let all "A.R." readers in on it if we screw Roy's arm a little.

It won't be long now before we will be up to our ears in election of officers and you may even score a new scribe to present the Club notes, but until then you will have to put up with me. 73, Warren 4GT.

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SOUTH AUSTRALIA

The April monthly general meeting of the VK5 Division was held in the club rooms to a little below-average attendance of members and visitors. The President, Tom 5TL, opened the meeting on time and introduced the guest speaker, Mr. P. Rhen, from the S.A. Institute

of Technology, who was to lecture on "Solid State Integrated Micro-Wave Circuitry". During this very interesting lecture, he covered quite a bit of ground and discussed at some length, thin film circuits, semiconductor integrated circuits, multi chip integrated circuits, and thin film integrated circuits. He then gave a short history of these devices, together with a description of their construction, and also described the three types of packaging of the integrated circuits, military, space and industrial. Closing the lecture with a discussion of the costs, and the advantages and disadvantages of integrated circuits, he also gave his opinion as to where it is all going. All in all, a very interesting lecture, both on the blackboard and with the plentiful supply of samples to illustrate his point, and judging by the applause which followed the vote of thanks ably proposed by Bob 5PU, it was much enjoyed by all present, and if I may be permitted to offer my humble opinion, he certainly knew his onions and how to put it over.

Very little business, either Divisional or Federal was discussed, and Geoff 5TY presented his report on the Federal Convention and joint I.A.R.U. congress held in VK2 over the Easter week-end, and was thanked for his efforts in this regard.

He took the opportunity of presenting the two Life Membership badges that he had brought from the Convention to George 5RX and Warwick 5PS and said a few words of commendation to them both for their long services to the VK5 Division.

George, in replying to the presentation, said he was stuck for words, but he had always tried to do his best for Amateur Radio and the Division in general, and if every Amateur present did the same, then all would be well for our hobby. Warwick, noted for his modesty, self-effacement and natural shyness, said without hesitation that he was stuck for words, but would content himself with agreeing with all that George had said, and added for good measure, that now the Liberal Government had got back in power in VK5, a couple of O.B.E's should also be considered! Judging by the reception this received from all present, I feel that the chances of such an honour being bestowed on him at least, are decidedly flimsy. George perhaps, but that blowhard, never.

One or two matters, purely of a domestic nature only, were then discussed, and with the hands of the clock showing 11 p.m.—deadline for you—the meeting closed somewhat in a hurry, so much so, that I had the impression that the Alsatian Houndawg had returned from his burying place, a thought that speeded me homewards.

Of particular interest to members at the meeting was the presentation of the J.A.R.L. pennant that Geoff 5TY brought back with him from the convention with the compliments of the J.A.R.L. The President, in accepting the pennant on behalf of the VK5 Division, said a few well-chosen words, which were received with acclamation by all present.

Among the welcome visitors at the meeting, was none other than Don 4GP, who, incidentally, is an ex VK5, better remembered as 5DL, and he was busy most of the night in greeting many old friends. He recognised me immediately, probably my athletic build, and when I suggested that I might one day visit VK4, he said at least I would not slip on a banana, but the tone in which he said it, leads me to believe that possibly some other more painful fate was in his mind. Good to see you again Don.

Heard my favourite doctor on the air whilst listening on 7 Mc. band at Oakbank this year, none other than Colin 5XY who was heard to say that he had not done much radio of late but was being bitten by the bug once again. So far he is on a.m., but that does not mean a thing in these days!!

I also heard Barry 5YB at Keith in QSO with Huck 5JU and spent some time reading their mail. Was amazed to hear Huck say that he was anxious to cut the lawns, but as it was Sunday he did not want to be the first in the neighbourhood to start. However, let him hear just one lawnmower start up and he would be in it pronto. How unchivararolous—unchivarlr—unchiv—how low can one get?

Had the pleasure of working Colin 5CY and Ron 5ZRW who were portable at Port Clinton. Col. was doing a Simon Legree act with a whip, and Ron was weeding the lawn at his orders. Ron had a bit of a grizzle when he spoke to me, but the whip proved too strong and back to work he went.

Nobby 5WK gave me a call, he described it as his annual, but I treated that with ignore and told him to call again as I was having trouble resolving his signal, a fact that caused him to prance all around the room, but we finally made it and swapped exaggerations for quite a while. His XYL was visiting one of his daughters interstate and Nobby was spending the Easter week-end alternating between QSOs and making cups of tea, and believe me he makes a potent cuppa!

Also had my usual annual contact with Carl 5SS and Frank 5MZ, although I felt for a while that I was going to miss them, but fortunately they gave a break at last and I burst in. Missed out on quite a lot of the usual VK5 contacts this year, whilst portable, mainly because there did not seem to be so many stations from the "big smoke" on the air. However, the wise men from the east made up for it and I had more than my share of interstate calls this year.

Dave 5DS was putting the loudest and strongest signal of them all when I heard him, he was working the Admiral 5VB at the time, and was telling him that he was going to make a visit to the Zoo on the next day. I have not heard him since and fear the worst. Hope they never managed to catch you Dave!!

Called Bob 5RI at Mount Bryan and managed to contact him, although he told me that the dust that was blowing at the time was reading several db. over plus 9 and naturally was making it very difficult to copy me. I finally lost him, apparently in the dust, but was well satisfied because my little 25 watts was above the dust at times.

Hughie 5BC heard on 7 Mc. working 2AHL mobile at Renmark. Stuck around in the hope that I would be able to give Hughie a call, but he folded up without any warning. Hope all is well, Otto?

Another stranger to me to be heard on 7 Mc. was none other than my old football mate of years ago, Keith 5ZY. I usually manage to work him from Oakbank, but missed out this year. Met a bloke named Bob somebody or other, who works on the Tote with me, and he claims to know you Keith. I tried to pump him for a little espionage news on Keith, but he was too canny.

Kevin 5EP is a new one to me on 7 Mc., but as he was heard to say that he is not very active, this is probably the explanation for him being a newcomer to me.

About this time every year when I take my annual leave Comps 5EF usually takes over these notes and does such a splendid job that I gnash my teeth for several months after. This year, however, my holidays have fallen in such a way that I am able to fit the notes in, and Comps has lost his annual chance to flourish his "little black book" containing the names of all the quack-quack stations in VK5, much to my mortification. Sorry about the notes Comps, I know how upset you will be over not being able to have the annual shot, but stern issues require stern measures!

Talking about quack-quack, don't let anybody tell you that they won't work Ancient and Modern stations, or won't even answer a call. I called them, and was called by them, at Oakbank, and never missed out on one. I have heard this story of social status on a number of occasions, but can only speak as I find. Maybe it is because of my modest nature, or possibly my winning ways and charm—the same to you.

Was quite surprised at the number of letters from country members of VK5 that I received commenting on my write-up on the recent lecture at the monthly meeting concerning U.F.O.—unidentified flying objects. I have always been a little dubious on my writing up the lectures on the meeting nights. I feel that I could be accused of being something of a padder—down Pincott 3AFJ, down—but apparently the country member likes to hear about the lectures. Without being over modest, I felt that I did a good job on the abovementioned lecture, and Leith 5LG agrees with me, don't you Leith? I thangyou—I thangyou.

Notice by the VK4 notes for April that VK5 was honoured by a visit from Bob 4RW and my life was only spared because he could not remember my initials to find me in the telephone book, and he had left his Call Book behind. Well, I suppose that I have to be lucky sometimes, although I think I would have been prepared to run the risk for the opportunity of meeting him, despite all he said about the heat in VK5. VK3, yes, but never VK5!!

Listened in to 5JQ and 5JD having a spirited discussion on the merits of their respective antennas. John is using a ground plane, whilst Al. is using a G5RV, and all in all, I felt that honours were about even in the discussion.

It is a funny thing how call signs stick in the mind, no matter how long ago the call may have been relinquished. Was listening to 5MV working Les 5NJ the other day and the call of 5MV rang a bell in my mind, but somehow I could not place it. I looked up the book and found that 5MV was the Rev. Winkler, a gentleman that I had met several times in connection with the dubbing of the session "Lutheran Hour," but I still could not get the call off my mind. Eventually it dawned on me, the original 5MV was none other than my Chief who was licensed some thirty years ago, and gave it away to concentrate on commercial radio. Don't tell him that I had forgotten his call, he might give me a dirty job!!

Some of these Amateurs are brave men these days. Rex 5HO, working Frank 5MZ, was heard to say that he had been called 50 times to the evening meal and he felt that he would have to do something about it. 50 times!! I have gone as many as three calls, but 50, not me brother!

Any time that I listen on 7 Mc. when it is open there are always more than their share of VK3s about, but the other night, or should I say the other early evening, the band was full of stations, but only one VK3, none other than Murrie 3AVO, and with a signal that did him credit. Don't know whether he had scared all the other VK3 stations away, but nary another one could I hear.

Les 5NJ, not being a "dyed in the wool" c.w. man, did not recognise the call of Harry 5MY when he heard it on phone and had to be very apologetic when he woke up to just who 5MY really was, and after all these years, too. Harry had shown up on 7 Mc. testing, prior to undertaking to handle the 5WI broadcast on the following Sunday morning.

9M2GD passed through Adelaide recently and called Ray 5RK, late at night, with an invitation to visit the city's Chinese restaurants. Owing to the hour being close to midnight, this invitation had to be declined, but Ray and the President 5TL met him later at the airport on the way out, as he was only here for a few hours. He was a member of a party that visited the famed Barossa Valley as part of his look around our fair city and would have also visited VK6 on his way home.

Incidentally, Ray 5RK has almost completed his term as President of the Air Force Association and is hoping to see more of us than has been possible of late. One of my espionage agents planted right in the middle of the Association, tells me that he has had to entertain some high ranking Air Force "Brass" during the past year or so.

The last Scavenger Hunt organised by W.I.C.E.N. was well attended with 12 vehicles taking part. These nights are quite educational in matters of local geography and observation, and the winner turned up in John 5ZDZ, with one competitor having travelled some 62 miles to get his answers. Much to the organiser's surprise, no one called him from Balhannah in reply to the question as to how far it was to that country town from . . . ., I think he was half expecting someone was on the road there before "waking up".

Regarding the geography part of the hunt, Uncle Tom (5TL) found himself looking for the Tusmore Police Station on Greenhill Road, and finally had to resort to looking in the telephone book in a public telephone (a canny bird is our Uncle Tom), only to find that there was a Burnside Police Station on Greenhill Road, Hazelwood Park, but nary a sign of a Tusmore Police Station. It is now concluded that there is no such station.

One thing came out clear from the hunt. Likely future contenders or competitors should first consult their piece of paper and place the points of call in a good sort of order before leaving the starting point, as there is not much to be gained by travelling any more miles than necessary, even if you are just driving for the fun of it.

Uncle Tom 5TL passed through Berri recently and attempted to seek out Hughie 5BC, but no sign of anybody at home or at the treadmill. It is presumed Hughie had gone to Waikerie where there was a "Fishorama" with a first prize of $1,000. My spies have not as yet reported him winning it!!

George 5RX was telling me at the meeting, with a tinge of sadness in his voice, that in 1929, when he was married, Dougal 5BY, Mayo 5WR and Len 5LF were his best man, groomsman, and M.C. at the festivities respectively. With the passing of Len 5LF this month, only George now remains of the foursome. Such is life.

I have mentioned in these notes before of the G.M.H. Firebird Club and their net on 14 Mc., but up to date I have never been lucky enough to hear them in action. It appears that I have missed them again, because one of my spies, planted right in the middle of the Firebird, tells me that last Sunday night George 5CV, Rob 5WA, ZS2SG of Port Elizabeth in South Africa, and about 10 members of the Club in W land, were hooked up for quite a long while. Such is my luck, never mind I will get them yet.

Well, I have run out of news, and will have to be satisfied with this little lot for this month. One of these days I will manage to get a real bag full of news and have the pleasure of a real big column in the magazine—down Pincott 3AFJ, down!! I think I am going to have trouble with this bloke!!

73, de 5PS—PanSy to you.

WESTERN AUSTRALIA

Hi there! Well another page has been removed from the calendar, another Easter has slid by and our new Federal Councillor, Neil 6ZDK, is still stunned by the Federal Convention, I think. From all accounts a busy though enjoyable time was had by all, both at the Convention and at the Region 3 Congress. It was perhaps unfortunate that some countries which had expressed interest were prevented by lack of funds and various other reasons from sending a representative to the Congress.

Of most interest to us here in the West is the good news that 1969 should see the Convention held in our own fair city. This will mean that a great deal of preparatory ground work will be necessary if this function is to be a success. So, when the call comes for voluntary assistance, two paces forward march —you and YOU and me!

The merry month of April saw a smaller than usual attendance at the monthly meeting, which was of course followed by the Annual General Meeting. Perhaps it was because of the cold wet night or the fact that some folk were still enjoying the Easter break—who knows? Ours is not to reason why, etc. Sufficient to say that the necessary reports were read, revealing a satisfactory state of affairs within this Divvy. Luckily, sufficient public spirited fellows were offering and the "press gang" will not have to "co-opt" members to fill positions on the Council. Thanks chaps, and good luck as you go forward into advising and guiding the affairs of the Institute.

Our new President is Bob Elms, VK6BE, who has always given great service to this Division over the years. Congratulations Bob.

A number of new jobs have been found for members of the incoming Council, mainly designed to lighten the burden of our hard working Secretary.

It is with deep regret that we must record the untimely passing of Bill Moore, VK6BA, and our sincere sympathy goes to his wife and family.

For those who are unable to hear the Sunday news broadcasts and neglect to read the local Bulletin, it may be of interest to note the re-commencement of Slow Morse sessions on Monday evenings on 80 and 6 metres. Together with the lowering of the c.w. requirements, perhaps these sessions may encourage a few more bods to tackle the Morse section of the examination.

Welcome to Kevin VK6ZKR —a new call to appear on 6 metres.

One of my ex-spies (yes, I have just sacked him) let me down badly. It seems from the meagre information offered me that Keith 6KH has moved to a new QTH. But where? When? What's the good of half a story.

Roger 6DT, struggling manfully with the problems which beset those who attempt to home-brew five-band transceivers, has been heard recently on 80 and 20; good work OM.

Alex 6AS is now sporting a very nice piece of sideband transmitter which will enable him to appear on any of five h.f. bands. He is currently delving into the receiver side of the question and discovering things about a trapped vertical antenna which adorns a small space in his back yard.

Remember that space that I have been advising you to watch with regard to the Zone 29 Award? Well keep watching!

Well that winds it up for now. 73, Ross 6DA.

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TASMANIA

Your Council appointments for the year 1968-69 as as follows: President VK7CT, Senior Vice-President, VK7AL; Junior Vice-President and Zone Representative, VK7CR; Treasurer, VK7ZRO; and Secretary, VK7EB.

The Annual General Meeting of this Division was held at the Club rooms on 23rd March, and was followed by the Annual Dinner attended by 77, made up of guests, members and their friends. We were delighted to receive the Director of Posts and Telegraphs, Mr. R. R. Gilson, and Mrs. Gilson; the Senior Radio Inspector, Mr. A. Monrow, and Mrs. Monrow; and Mr. H. Melling and Mrs. Melling as our official guests.

Northern Zone elections for the year 1968 were as follows: President, VK7ZCP; Secretary, VK7PD; Treasurer, VK7ZCW.

Our most sincere thanks go to Ted VK7EJ, our Federal Councillor, and David VK7MD, his official observer, for attending on our behalf the Convention and Region Congress held in Sydney over Easter. We look forward to their reports.

Congrats to Peter ex-VK7ZPD on gaining his full licence with the call of VK7PD, and Reg ex VK7ZAO in the same regard, call sign yet unknown.

Many old timers will remember Charles VK7CM. I am glad to report that he is again living amongst us with that call sign, having been appointed to a Professorship at the Tasmanian University.

73, Ian VK7ZZ.

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CORYRA is now Australia's best Youth Radio magazine. If you know a young lad interested in Radio, recommend him to send 15c for a sample copy or a year's subscription at $1 post paid to this monthly magazine. Contains construction, theory and general articles of special interest to the young enthusiast. Hams who already have their ticket might even find some novel ideas—for all Youth Radio Clubs Coryra is a must! Send to sub-manager, 112 Monaro Cres., Red Hill, A.C.T., 2603.

FOR SALE: Eddystone 888A Communications Rx, Ham bands only, 1.8-30 Mc., excellent performer with product detector, variable selectivity, xtal cal., $200. Carphone MR3A 6/12 final, 3 channel with all xtals for A-B-C, $60. 4X250B Tube with special socket and blower, new, unused, $40. Transformer with all h.t. and l.t. windings to suit this tube as described "Wireless World," March-April, 1967, new, $24. Pye 9 Mc. xtal filter with sideband xtals, unused, $20. B. & W. 2Q4 phase shift network, unused, $8. Creed 5W75 Teleprinter w/o keyboard but with reperf., not in standard speed but can be converted, $40. All must be cleared, no time for construction. VK3IZ, Phone 437-1811.

FOR SALE: Heathkit RF Signal Generator, 160 Kc. to 220 Mc. in five bands. Calibrated against laboratory standard, $30. VK3QY, Chas Richardson, 1252 Nepean Highway, Cheltenham, Vic. Phone 93-5577.

FOR SALE: Heath Solid State Voltmeter, Model IM16 Kit. $70. K. Pincott, VK3AFJ, Phone 25-5775.

FOR SALE: Shack situation ridiculous, overcrowded and underused. Heathkit HW22/40M Transceiver with 240v. a.c. silicon p/supply, all accessories, $200. Several Philips FM1674C factory converted 146 Transceivers, 25w. output, transistor supply, with mike, mountings, aerial, less crystals, $44. FM1649A complete, unconverted, $10. "Courier" FM200 complete, unconverted, $20. Pye Mk. 2 base, 240v. a.c., receiver tuneable 52-53.5 Mc., transmitter 15w. a.m., excellent performer, $40. Pye Mk. 3 mobile, complete, working, $20. Philips 20w. a.m. transmitter, 144 Mc., with speech clipping and filtering, $30. Home-brew mobile, 40w., Geloso V104 VFO, 6DQ6, 80 through 10 metres with 20w. 144 Mc. transmitter, common modulator switched between both, fully metered, mike and 12v. d.c. transistor supply, $80. Command Receiver, 6-9 Mc., partly converted, $10. "Weston" LM9 Small Ship Transceiver, 2524 Kc., demo. unit, $60. Partly built 90w. H/F transmitter, Geloso V104 VFO, cabinet and metalwork, meter, modulator transformer, valves, etc., $40. SSB Exciter, output couple watts on 14 Mc., 5.5 Mc. filter, 6 valves, 7 crystals, compact handful, $40. "Bendix" BC312 Receiver, U.S. Army version of BC348 Receiver, coverage 1.5-18 Mc. in six switched bands, 455 Kc. i.f., in-built 240v. a.c. supply, $50. VK2ASZ, 179 Rusden Rd., Blaxland, N.S.W.

FOR SALE: VHF Base Station. A.W.A. BS50 converted for 2 metres. 100 watts input, one set of crystals. $98. Tony Swinton, Phone 560-9168 Melbourne.

SELL: AR7 Communication Receiver, A1 order. Complete with p.s. and spkr., etc. Also power supply unit, 750-800 at 175 mA., 280-300 up to 100 mA., 6.3v. fils., 105v. negative bias, good regulation. VK4SS, 35 Whynot St., West End, Brisbane, Qld. Will pack and forward.

SELL: Contax AM Base Station, 53.032 Mc., xtal mike, tuneable rx needs alignment. $45. K. Pincott, VK3AFJ, Phone 25-5775.

SELL: Heathkit complete station in good working condition. Mohawk Rec. and matching Apache transmitter. Incl. VFO and xtal calib. built in. Five bands, 80 through 10 metres. CW and AM full power, SSB mode, but needs adaptor. $210 for both, $105 for rcvr. VK4CU, P.O. Box 601, Toowoomba, Qld. E. Coan. Tel. 5-3441.

SELL: Heathkit Model GR-91 Rx, freq. 1.5 to 30 Mc., good condition, plus step-down transformer 240v.-115v., built-in b.f.o., $30. Bruce Paton, 15 Dean Ave., Mt. Waverley, Vic., 3149. Ph. 232-8141 after 6 p.m.

SELL: H.R.O. Senior Communications Receiver. 1.7 Mc. to 30 Mc. general coverage, crystal filter and BFO. Completely re-aligned. Complete with power supply and loudspeaker. $120. Phone Melbourne 787-1407 A.H.

SELL: In original carton, unused genuine Vibroplex "bug" key which is surplus to present requirements. Cost $35 to land. To best offer over $20. Roth Jones, 1 Albert Rd., Melbourne, 3004. Phone 26-6911.

SELL: Pye Reporter Mk. I, 53.032 Mc. with crystals and working. QQE02/6 final, transistor modulator, 6 or 12 volt operation. $25, offer. VK3ZVJ, J. Brown, 31 Laurel St., Red Cliffs, Vic.

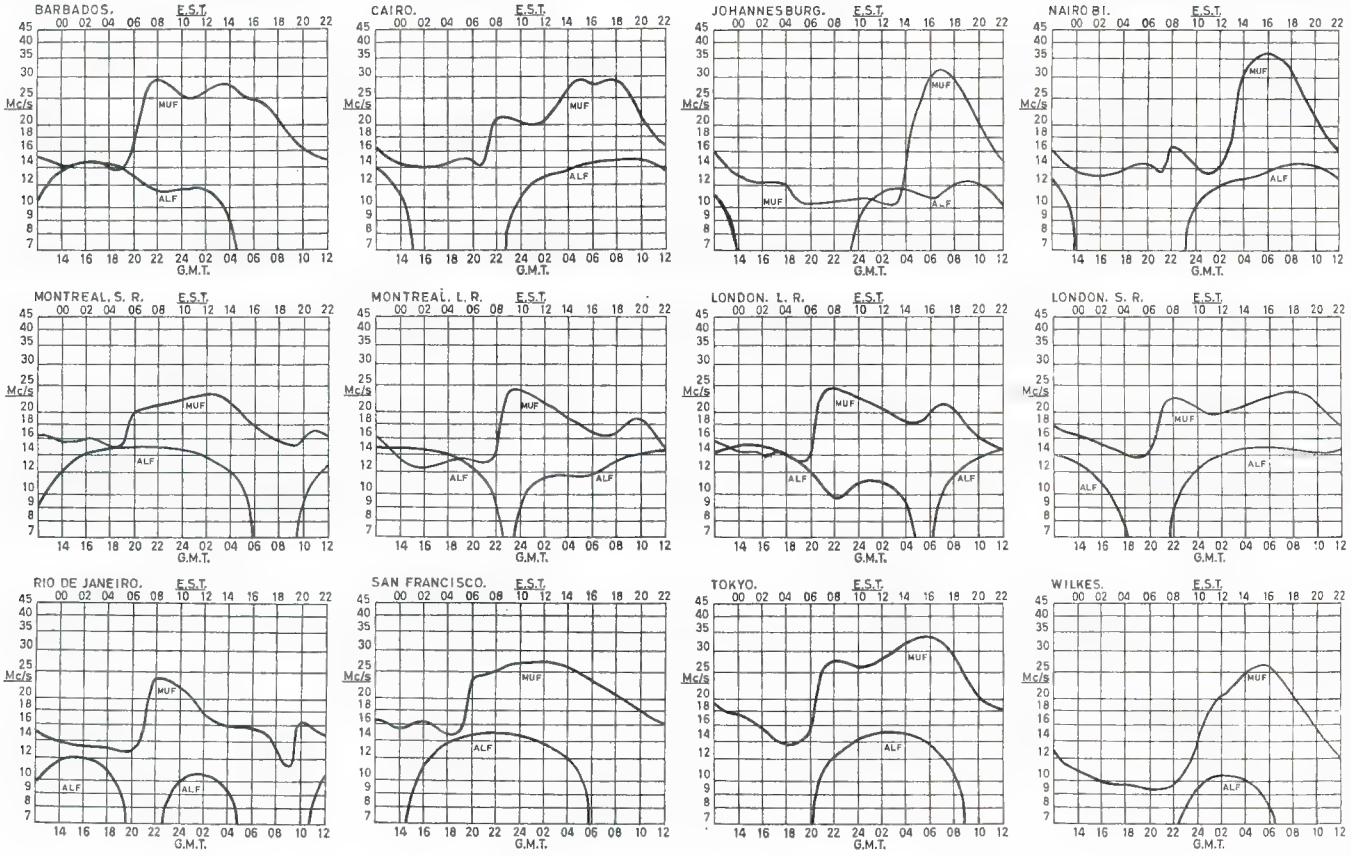
WANTED: Communications Receiver. AR7, BC348 or similar or Geloso Amateur Band Tuning Unit. Condition, price, to VK2ZST, 34 Fiona Rd., Beecroft, N.S.W., 2119. Phone Sydney 84-1680.

WANTED: Prop. Pitch Motors. If you are not using that prop. motor you have, write and let me know what you want for it. Three motors are required. C. S. Rann, VK1CR, 23 Batchelor St., Torrens, Canberra, 2607.

WANTED TO BUY: Teleprinter, Model 15, Creed 7B or similar. Also Terminal Unit, home brew or commercially built. P.O. Box 18, Tennant Creek, N.T., 5760.

PREDICTION CHARTS FOR JUNE 1968

(Prediction Charts by courtesy of Ionospheric Prediction Service)



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FOR ACCURACY, STABILITY, ACTIVITY AND OUTPUT

Our Crystals cover all types and frequencies in common use and include overtone, plated and vacuum mounted. Holders include the following: DC11, FT243, HC-6U, CRA, B7G, Octal, HC-18U.

THE FOLLOWING FISHING-BOAT FREQUENCIES ARE AVAILABLE IN FT243 HOLDERS:

6280, 4095, 4535, 2760, 2524 Kc.

5,500 Kc. T.V. Sweep Generator Crystals, $7.25; 100 Kc. and 1000 Kc. Frequency Standard, $17; plus Sales Tax.

Immediate delivery on all above types.

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ALSO AMATEUR TYPE CRYSTALS — 3.5 Mc. AND 7 Mc. BAND.

Commercial—0.02% $7.25, 0.01% $7.55, plus Sales Tax.
Amateur—from $6 each, plus Sales Tax.
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CRYSTALS FOR TAXI AND BUSH FIRE SETS ALSO AVAILABLE.

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With the co-operation of our overseas associates our crystal manufacturing methods are the latest.

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VK5MS	317/328	VK4HR	293/309
VK3AHO	314/326	VK4FJ	279/296
VK6RU	307/330	VK2APK	264/267
VK6MK	304/321	VK2AAK	263/267
VK2JZ	301/316	VK3TL	262/266
VK5AB	300/314	VK4TY	256/257

New Member:

Cert. No. 84—VK3ZE 179/182.

Amendments:

VK3HL	234/240	VK3SM	138/140
VK4DO	189/201	VK3AMK	131/131
VK4PX	158/159		

C.W.

VK2QL	295/315	VK4HR	268/290
VK3AHQ	294/306	VK3NC	266/286
VK3CX	291/312	VK3ARX	266/274
VK4FJ	291/313	VK3YL	265/282
VK4QM	291/313	VK6RU	264/285
VK2AGH	281/294	VK2APK	261/268

New Members:

Cert. No. 91—VK5XK 118/122
Cert. No. 92—VK4PX 98/102

Amendments:

VK3RJ	240/253	VK4DO	184/201
VK3KS	215/221		

OPEN

VK2AGH	310/328	VK4FJ	295/318
VK6RU	309/322	VK4TY	295/307
VK2VN	306/321	VK2EO	293/314
VK4HR	305/327	VK3ARX	287/295
VK4QM	305/329	VK2APK	284/292
VK6MK	305/322	VK3TL	281/285

Amendments:

VK3HL	260/278	VK4PX	183/188
VK2SG	248/252	VK4DV	115/115
VK4DO	220/238		

Yaesu SSB EQUIPMENT

Designed and manufactured in Japan, this equipment ranks with the best.
Check the range and write for further details.

FRDX-400 Receiver, successor to the famous FR-100B, has the additional features of 160 m. band, I.F. "T" notch filter, 100/25 kc. calibrator, selectable slow/fast A.G.C., new styling of cabinet and panel. Provision for internal installation of F.E.T. V.H.F. converters, F.M. with squelch, fixed channels, C.W. and F.M. mechanical filters, WWV, citizens band, transceiving with FLDX-400, etc.

FLDX-400 Transmitter, matching design, electrically similar to the FL-200B. Mechanical filter, VOX, ALC, conservative 300 watts peak.

FLDX-2000 Linear Amplifier, AB2 grounded grid, built-in power supply and SWR indicator. Forced air cooling. A real signal booster for any Amateur exciter or transceiver available in VK.

FTDX-400 Transceiver, 80/10 m., 400-500w., built-in AC power supply, VOX ALC, off-set tuning, calibrator—the lot!

FTDX-100 New model of the well known, low current drain, transistorised transceiver AC/DC power supply built-in. Many additional features. Ideal for portable/mobile. 150w. peak input.

Also available: Transceiver FT-50, Transmitter FL-50, Receiver FR-50, Low Pass Filter FF-30DX, Type "F" SSB Generator assembly, SWR Meter K-109, Yaesu Valves and Spares, Co-ax. Connectors, Hy-Gain (U.S.A.) Beams.

Our Policy: 90-day manufacturer-backed warranty. All sets tested before despatch. After sales service & spares availability.

Obtainable from Australian Agents: **BAIL ELECTRONIC SERVICES**
60 Shannon St., Box Hill North, Vic., 3129. Phone 89-2213

Rep. for N.E. N.S.W.:
MOSMAN RADIO SERVICES
P.O. Box 198, Tamworth, N.S.W., 2340
Phone 66-1010

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★ A.R.R.L. — **THE RADIO AMATEUR'S HANDBOOK** — 45th Ed., 1968 Edition .... **Price $6.10 Posted**
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★ ORR — **THE RADIO HANDBOOK** — 17th Edition .... **Price $13.45 Posted**
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★ STONER & EARNSHAW — **THE RADIO TRANSISTOR HANDBOOK** .. .. **Price $6.65 Posted**
This up-to-date Handbook covers a wide range of communication for both Amateur Radio and Commercial Applications.

★ A.R.R.L. — **THE RADIO AMATEUR'S V.H.F. MANUAL** .. .. **Price $3.00 Posted**

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★ *LOW PROFILE* ★ *COMPACT* ★ *STABLE*

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Output: —55 db. (0 db. = 1V./dyne Cm2)
Switch: D.P.D.T. P. to T.
Housing: Angle adjustable

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TYPE 45

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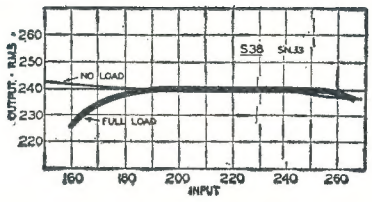

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Used (good condition): **$10.50.**
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455 Kc. centre frequency, 55 db. gain. Employs two PNP transistors and diode detector.

Price **$9.50.**

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Full CW-AM-SSB coverage, 80-40-20 metres. 180w. PEP SSB-CW. VOX-PTT-ALC. 10 Kc. Receiver offset tuning.

Kit **$328.78**, Wired **$428.78**.

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807—70 cents ea.
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6AC7—20 cents ea. or 12 for $2.
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All at Bargain Price of **25 cents each.**

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Frequency coverage: 3.4-29.7 Mc. in 7 bands. Triple conversion, employs xtal locked 1st and 3rd conversion oscillators. Selectable USB or LSB. Selectivity variable, 0.5 Kc. to 4 Kc. 1 Kc. dial calibration. Three stages double locked geared dial mechanism, 30 Kc. per turn tuning rate. Vackar oscillator employed in VFO for maximum stability.

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● **A111 9 Mc. SSB EXCITER**

A fibre-glass printed circuit board, the finest German crystal filter, diode ring modulator, and solid state circuitry all contribute to make the A111 the finest SSB Exciter available. Specifications: Sideband suppression, 80 db.; carrier sup., 65 db.; audio freq. response, 350 to 3,000 cycles; mic. input, 1 mV. on 5K ohm load. Incorporates VOX amplifier and relay amplifier.

Price with KVG **XF9B** Filter, **$120**.

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Frequency coverage: 4950 to 5550 Kc. Frequency stability better than 100 c/s. over 12 hours long term; better than 8 c/s. over 10 minutes if enclosed in suitable box. Output: 350 mV. on 220 ohm load.

Price **$22**.

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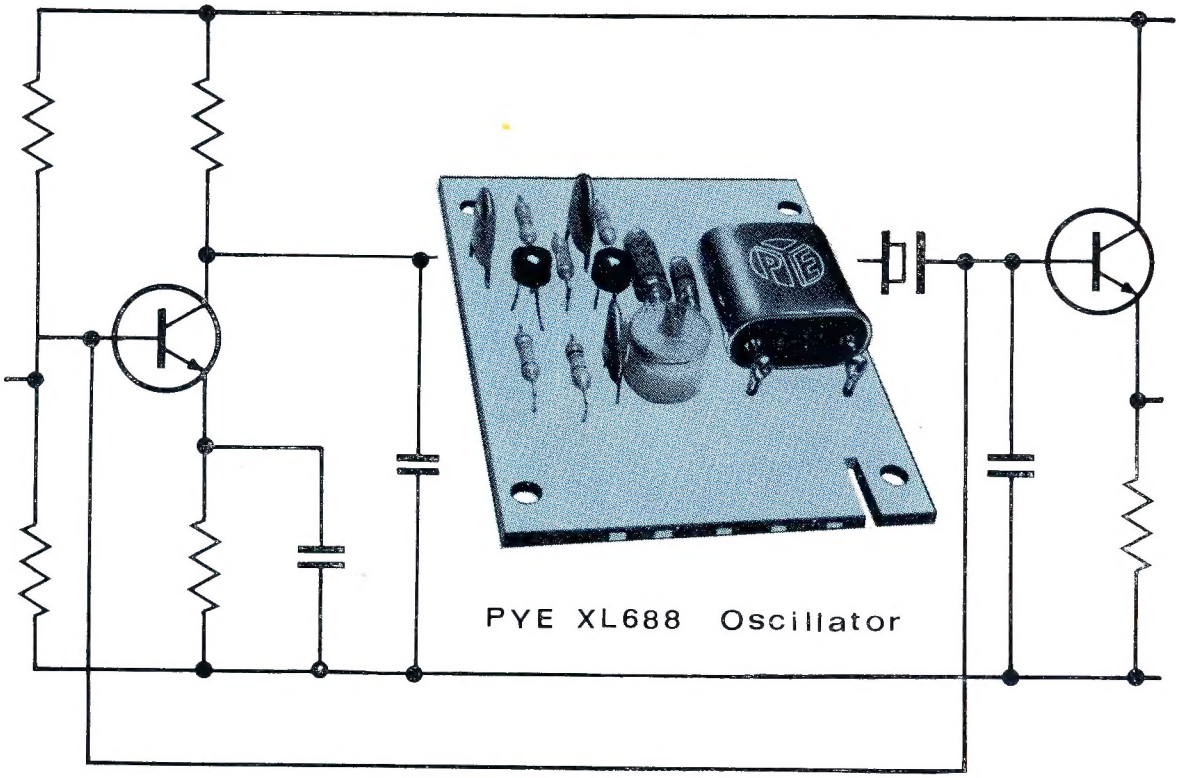

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